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THE SON OF THE PLUMBER.

Since we have started in our columns the discussion of business management, several interesting comparisons have been drawn between the methods employed by the plumber and the steam-fitter, and the hardware man. These have been, generally, to the disadvantage of the former. Discussions at conventions and numerous articles in trade journals, have served to emphasize the weakness of the plumber and the steam-fitter in the management of his business. Good men, thoroughly versed in the practices of plumbing and steam-fitting, have acknowledged their lack of education along business lines, but have at the same time relieved themselves from further thought of the matter by wagging their heads and saying: "You know you can't teach an old dog new tricks." Many of these are confronted by a more serious problem. That is the responsibility of placing before their sons the advantages they confess they never had, and whose importance they recognize.

We have published several letters from plumbers and hardware men who have met their responsibilities gallantly and have laid sure foundations for the continuance of their business on a profitable and expansive basis by sending their sons to trade-schools and business-colleges. We are pleased to be able to reproduce an excellent letter on this subject by one of our readers, who claims to have solved the problem. It is a thoughtful discussion of the subject, and will be helpful to all those who are interested in the matter.

There comes a time in the life of every man when he asks himself the question, "What is the best course to adopt in respect to my boy's future?" If this man is a plumber, owning a nice little business of his own, and the boy seems to be disposed to follow the business, the father asks himself the questions set out in your issue of March 11, on page 261.

The writer is not a plumber but is in a line of work that has brought him in close contact with plumbers and, in fact, with men in many branches of the building business. He has seen the thing worked out with plumbers, carpenters, painters, mill-owners, etc., and is convinced that so much depends upon the boy that a general answer will not do.

There is a trade and there is a business connected with

the trade. If the boy shows special aptitude for the trade and sems to have no special aptitude for the business, by all means have him learn the trade thoroughly. If he posesses an excellent business head and you have a good business established, by all means have him learn the business of the trade. Let me illustrate by a true story: About 24 years ago, an old gentleman who owned a fairly prosperous planing-mill business in a good sized city went to a young fellow with whom he was well acquainted and asked him to come into the office of the mill and learn the business.

The young fellow was an architectural draftsman and getting good pay. The pay offered by the old man was about one-half the pay he could earn as a draftsman, but it was explained to him that as he learned more he would earn more. The young fellow looked into the matter and discovered that the old man had two sons working in the mill. He went to the father and said: "You want me to learn the business but you have two sons in the mill working. Suppose that just about the time I got wise you would die. The boys would then throw me out and run the mill themselves."

The father replied: "No fear. I made a mistake with those boys. I learned the trade myself when I was young and came to this city 40 years ago as a journeyman jointer. After awhile I bought this mill at a court sale when the owner went bankrupt. I have become almost rich at the business and concluded that it would be a fine thing to leave the boys. So after they finished their high-school course, for I wanted them to have a better education than their father, I put them out in the mill and made them learn the bench-work thoroughly. Now I have tried to work the boys into the office and they do not fit. I left them too long in the shop. I have given them both good trials in the business-end and they are failures but as men who know their trade they are the best I have. Now, if I die they will fail, so I want a young chap to come in and learn the business of the trade."

The young fellow went in to the office and was put first at detailing from architect's drawings. After a couple of months of that work the old man had him working at bills of material and also made him read books on the planing-mill business, but there are fewer books dealing with that than with plumbing. He had him go to night-school and study book-keeping and after his course was completed sent the book-keeper on a two months' vacation and put this young chap at the books. Then he sent him out to estimate. After one year of this sort of training the old man got into the habit of getting down to the office late and going home early. In the third year he died, after first incorporating the business and giving the young fellow a couple of shares of stock so he could be a director.

The widow and the daughters voted to retain him as manager, but of course the two sons fought it because they wanted to own and run the mill. He had the majority of stock in his favor, however, and then they made a proposition to him to sell their stock so they could get out. He was a decent fellow and told them about his conversation with their father and found they knew all about it but still did not recognize their own limitations. He put one out estimating and the other he made a foreman. The estimator was not a good estimator and the foreman was not a good foreman. Their interest in the details of the work overcame their judgment. They were first-class bench-hands and that was all. He finally closed a deal whereby he acquired their stock in five years by giving them notes for a price agreed upon and paying these notes off in monthly installments out of the savings from his salary and the profits of the business. They worked in the shop as hands for a couple of years and then went away to other mills. Where they are now he does not know but he owns the business today and retains the respect of every member of the family. The girls sold him their stock as each one married and he purchased the mother's stock before she died.

That old man had simply made a mistake. He had a business to leave to his sons and took them at the most impressionable age and forced them to think along pretty narrow lines. You can make almost anything of a boy of good common sense if you take him in time. The father succeeded in the planing-mill business because he was a good business-man and understood the planing-mill business. That he had learned a trade in his young days was a help to him because he had not taken such a great interest in his work that the bench-work absorbed his whole attention. His sons happened to take a wonderful fancy to the fascinating work of wood-working. If they had learned the business and become well-to-do, they might have been numbered among the men who take up some handicraft as a hobby. With this bent of mind it was a mistake to put them in the shop when it was not necessary for them to go there.

I know a plumber who had two sons. One he taught the trade and the other he taught the business. They are both good fellows but the older is working for the younger for wages and is a foreman. He spent too much time learning the trade. Not that it is a bad thing to learn a trade but a father can benefit his sons most if they can be directed into his line of work and if a boy shows no particular liking for some other thing his father can help him. The old man knows all the pitfalls and his seasoned judgment can save the boy from many mistakes. If he has learned the trade himself and worked up to managing a business, then his son is his logical successor.

Now to answer the questions seriatim: 1. If he shows no special business aptitude and likes the work, send him into the shop so he will learn the trade thoroughly. It is better to have him a first-class workman than an unsuccessful business-man. Perhaps his business instincts will come out later.

2. Why send him to college if he is to inherit a good business? College training is today a nebulous thing. It is merely one of the things that show we are getting on a pretty high plane of existence. College training for the sons and daughters of the well-to-do is a mark of culture but for those who are not rich enough to be independent and live without working, it is largely money wasted. Medical men, we know, are hard put to it to earn a living. We all know cases of starving lawyers. The engineering profession is overcrowded today and the pay of the average young engineer and architect is away below the union-rates of plumbers and carpenters and plasterers. If you have a well-established business to leave to your son, then by all means put him at it when he completes his high-school course, while his mind is fresh and plastic and he can absorb ideas and facts fast.

3. If you have an established business and can afford it, the boy should have as much schooling as possible and he should complete a high-school course. He should have all the pleasure that life can give him up to about his 18th year. Then send him to a plumbing trade-school and have him complete the course there. Give him all the theory of the business first and also let him get as much practice as a school will give.

4. Send him to a business-college night-course after

he completes his trade-school course. This business-college course will perhaps occupy about six months. In nearly all our large cities there are schools established for the teaching of business in the larger sense, not merely bookkeeping and shorthand. To such a school the boy should be sent in preference to a school where he will learn mostly bookkeeping and shorthand. During the day he should be working in his father's shop helping the wisest old hand his father employs. His trade-school teaching should not be given any credit whatever. That only gives him the theory of the business and helps him understood the practical work when he gets into it.

5. After his six-months' apprenticeship in your shop and attendance at the night-classes of a first-class business college or school of commerce and administration, try to get him a job in the sales department of a plumbing supply-house. Here he should stay for a year, and if the house can send him on the road as a salesman so much the better for the boy. We will assume that he has now been out of high-school for two years and you can then say, "Son, come into the office and work for me for awhile with the idea that we will be partners some day, and after I am gone you will get the shop." Will you then have him in there to teach him the business? Perhaps. At any rate you will have a young fellow familiar with the details of his father's business, but who has never put in so much time on the trade-end of it that he will make a failure at the business-end.

Does it happen to strike the reader that such a course means pretty strenuous work? It may also strike the hard-thinking reader that it is not so strenuous as the pace he had to hit himself when he was not much older than the boy. However, he had no one to look carefully after him and see that one step after another was taken, all leading to the final goal. Nearly all men who succeed do so because they have a high purpose and push straight ahead. Many mistakes are made because of ignorance. Taking the case of the boy we have been discussing and analyzing it, we see that only a boy whose heart is set as his father desires will make a great success, but nearly every boy can be guided when wisdom is exercised. At the age of the boy we are considering, little thought is given to the future. The present is all absorbing. The cultivation of the muscles is thought to be important because nature is then putting on the finishing touches that make maturity. The boy does not know what it is that stirs within him but he feels his strength growing and he is at his best when making his muscles move.

About the same time sexual instincts develop strongly and the opposite sex strongly attracts him. Nature is working and he is in the hands of nature. To attempt to cross him too much in his admiration for athletes and his fondness for parading with a good-looking girl will do harm. Let him have his interest in athletics and admire with him the bright fresh young girls he instinctively seeks. If out late evenings simply see that he spends his evenings aright. Do not try to curb him too much. Cast your mind's eye back over your own career and see how many evenings you did not spend at home when you were the age of the boy. Simply ignore the base-ball and basket-ball talk if you cannot join in it, and treat his girl friends as if they were friends of the family from the time they were born. Pass over little trifling things and merely keep a hand on the helm so the boy will be always guided in the way he should go so far as his business-education is concerned.

At this stage in life, the father is not the father of a kid but he is the instructor, guide, friend, of a young fellow who must be prepared to travel through life. Many dangers will beset him in his business-career and it is to the father he must look for help to get started. Remember that, you fathers. To you it is given merely to get the boy started. He is a baby no longer. Start him right and your work is done. If you have reached the point where the larger affairs of your trade or calling take your attention, then start the boy right there. The preliminary work was done years ago when you learned the trade. Now you have the business, teach the boy the business. Save him some of the steps you had to take.

The writer is an engineer and architect. This problem of the boy always interested him, for when he was very young himself he taught in a night-school and he has taught in many night-schools since. It is not done for the money there is in it, for there is little of that. The question of service is uppermost in the sort of schools in which he has been engaged. He has a son of his own 20 years old and he is taking a technical-school course in his father's business because his father can help him and he likes it. The boy had a high-school course; then two years in practical work; next, a four years' engineering course which will complete his training so he can step into his father's office and carry on the work. The writer in his many years' experience at teaching and coming in contact with men in all trades connected with building has been interviewed by many parents and guardians. He has had many talks with disappointed men, young and old. He has had many talks with boys, serious-minded and frivolous. The foregoing advice therefore is given as the result of experience and much hard thinking.

"The Father of Some Boys."

NEW CONTRACTS RECENTLY AWARDED.

Houston, Tex.—The trustees of the Wm. M. Rice Institute have accepted the bid of the W. G. Cornell Co., New York, for the plumbing, amounting to $16,945 and from the Newbery Electric Co., St. Louis, Mo., for the electric equipment, at a cost of $18,960, for the administration building, mechanical laboratory andd power-plant.

St. Paul, Minn.—The Healy Heating & Plumbing Co. has secured the contract for lighting, heating, ventilating, electric wiring and installing elevator service in the new laundry building at the city and county hospital, the bid being $6,195.

Davenport, Ia.—The Ideal Heating Co. has the contract for the steam-fitting and sewer construction work in the new building for the "Times" on Second between Brady and Perry streets.

Dundee, Ill.—Morse & Wendt have the contract for a modern heating system in the home of Chas. Seegert on First street.

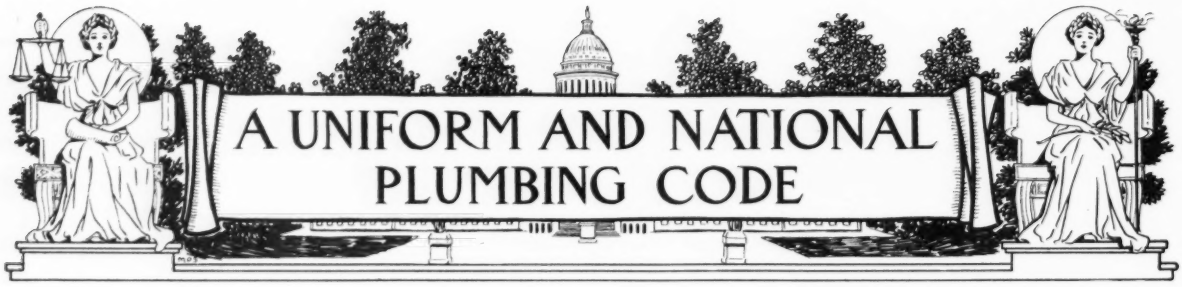
Louisville, Ky.—Brownfield & Co. have the contract for the steam-heating plant in the new $80,000 addition to Sts. Mary and Elizabeth hospital.

Shenandoah, Ia.—J. J. Cardwell has several contracts in hand, among them being one for a complete plumbing and heating job for the Zarn Mercantile Co., of Burlington Junction, Mo.; with S. J. Rodda, of Hamburg, Ia., for a fine plumbing job, and with several Shenandoah firms.

Aurora, Ill.—John Welsh & Son have been awarded the plumbing contract for the new Tucker residence on Spring street, which is to cost $6,000.

Rock Island, Ill.—Allen, Myers & Co. have the contract for the steam-heating plant, the plumbing and gas-fitting, for the new Rock Island Savings Bank. The systems to be installed are of the most modern and up-to-date type, and the various fixtures are to be of the best pattern and design.

Pueblo, Col.—D. E. Burke, 318 Santa Fe Ave., has been awarded the contract for the plumbing and heating of Pueblo county's new courthouse. The contract amounts to about $48,000. The specifications call for the most modern sanitary plumbing fixtures and for a hot-blast heating system.



By Henry D. McCormack, C. E.

X.

Rain-Leaders.

The matter of rain-leaders is a subject which before long will hold the attention not alone of plumbers and plumbing-inspectors, but likewise of city engineers and municipal authorities. At the present time the method of installing rain-leaders is about to be changed in many places, which will remove the work from the realm of sanitary plumbing and place it in the department of storm sewers. This is all being brought about by the tendency of the times towards purifying the sewage of cities and towns. In those places where sewage works are about to be constructed, or are contemplated for the near future, it is advisable, if not absolutely necessary, to separate the storm-water from the domestic sewage. This will, in most cases, necessitate two sets of sewers, the sanitary sewers proper, and the storm-water sewers. When two sets of sewers are provided in such cases, there are no problems to work out for the rain-leaders but the best manner of running them at the least cost and the proper sizes. The matter of trapping would hardly enter into consideration, since the storm-sewers would be clear-water sewers, used only occasionally, and flushed thoroughly every time used.

Where the old combined system of sewage is used, on the other hand, the rain-leaders partake to a great extent of the nature of stacks and drains and must be treated accordingly.

Dividing the rain-leaders into two principal classes, inside rain-leaders and outside rain-leaders, and considering the outside rain-leaders first, we find a peculiar state of affairs for the reason that outside rain-leaders are seldom run by the plumbers any higher than five feet above ground, from which point they are continued to the roof by the sheet-metal worker. That naturally means that where the sheet-metal pipe is connected to the cast-iron hub-and-spigot pipe, a tight joint is never formed, and the sheet-metal pipe itself is liable to corrode through in a short time, so this part of the work must be considered as leaky and defective. If then, the top of the cast-iron pipe or the sheet-metal pipe along the run is close to a window, door, or other opening in the building, the code should require a trap on the horizontal portion of the leader inside of the foundation-wall, and a clean-out plug in a clean-out opening of the trap. If the top of the cast-iron pipe and the sheet-metal pipe along the entire length of its run are a suitable distance away from all windows, doors and other openings, the trap might be omitted. In fact, it is better omitted from a sanitary standpoint, although not from an economical one, for the hot moist gas-laden air rising through the leader will attack the sheet-metal and destroy it in less time than if it were trapped.

Outside leaders that are run in yards, alleys, open courts or other places where they would be liable to be injured by wagon wheels or other means, should be required to be run at least five feet above the surface of the ground, and well anchored in place. In protected places the distance above ground the cast-iron pipe in run is of less moment, so long as it does actually project above the surface. The sheet-metal pipe should never be permitted to extend down below the surface of the ground, for its life would be greatly shortened thereby.

It might seem almost needless to require that all inside leaders be of cast-iron or wrought-pipe of the same weight and quality required for soil-pipes, but unless some such provision is incorporated in the code, all kinds of materials will be used from stove-pipe to first-class materials. The trapping of inside rain-leaders would or should depend upon the proximity of the inlet to openings to the inside of the building. If sufficiently far away, for instance, the distance required for soil-pipes, it would be better far to leave them untrapped, and have the benefit of their ventilating capacity. On the other hand, if close to openings to the building, they should be suitably trapped.

The one chief point of failure of rain-leaders is around the joint of the roof or gutter. There the constant "creeping" of the lines due to expansion and contraction soon destroys the joint if not properly connected. Architects are well aware of this weakness and generally specify some means for overcoming it, but plumbing-codes unfortunately seem to overlook that portion of the drainage system completely. Some architects require telescope copper sleeves or pipes, the upper one fitting snug within the lower one and extending therein at least six inches. Where the codes require the rain-leaders to be connected to the roof-gutter by means of a brass ferrule or solder-nipple, wiped-joint, and seamless drain-lead or copper tubing, the telescope method is not permitted, and architects resort to a soft metal offset near the roof, usually made out of two eight-pound lead bends. By means of such a construction the "creeping" of the line is taken up without damage to the roof connection. It would be well hereafter in compiling plumbing-codes to take this expansion and contraction of the line into consideration, and require a flexible connection of some kind at the roof.

The final consideration for rain-leaders must always be their size, and this is a question that ought to be worked out in each locality, the size of pipe being based on the rain-fall in that locality. It is obvious that as large pipes will not be required to drain a given area of roof surface in a dry arid region as would be required in a locality where the precipitation is at the rate of several inches per hour during heavy downpours, and this difference in quantity may well be taken into consideration in each city when compiling a plumbing-code. The mistake must not be made, though, of putting in too small leaders. For small porches,

bay windows and like projecting surfaces, pipes two inches in diameter may be used if they are found by calculation to be amply sufficient for the purpose. For main roofs, on the other hand, a size of two and one-half inches ought probably to be the minimum, even though a small size would theoretically be large enough.

Some idea of the laxity of code compilers in specifying the sizes of leaders that will be required, may be judged from the diversity of opinion on this one subject among the framers of the four codes selected for comparison. The San Francisco code is eloquently silent on this important subject; the Minneapolis code reads: "Rain-water leaders entering any sewer shall be of sufficient size and in no case less than three inches in internal diameter," thus putting upon the plumber or designer the burden of proportioning the leaders without giving them any standards to work from. New Orleans, like San Francisco, is silent on the subject, while New York gives specific sizes for house-drains, where rain-water is discharged into them. The sizes required in New York may be found in the following table, which shows the number of square feet of surface that will be drained by pipes of different sizes when laid at different grades.

Diameters	Fall ¼ inch per foot	Fall ½ inch per foot
6 inches	5,000 square feet	7,500 square feet
7 inches	6,900 " "	10,300 " "
8 inches	9,100 " "	13,600 " "
9 inches	11,600 " "	17,400 " "

This latter is the best way to cover the subject. Knowing the intensity of rainfall in the region, the framers of the code can figure the square feet of surface that pipes of different sizes will drain when laid at different grades, then state this information in the form of a table for the guidance of those called upon to design plumbing systems. It is well when doing so, however, to go a step further than the New York code, and give the areas that can be drained by pipes from three inches upwards in diameter.

On roofs inclosed by parapet walls, scuppers of sufficient size should be provided to carry off the rain-water in case of a stoppage of the mouth of the rain-leader. It is possible, though, that such a requirement might belong more to general building construction than to the sanitary code, but as it is one of the safety provisions of plumbing it would seem as though the plumbing inspector should be the one to see that they are provided.

Finally, no rain-leader should be used as a soil or waste-pipe, and no soil or waste-pipe should be used as a rain-leader pipe. That principle is so well known that it might seem useless to cover it in a code, but in the ideal national plumbing-code nothing must be left open to question. Everything must be stated clearly, explicitly and concisely.

(To be continued.)

CLEVELAND MASTER PLUMBERS ENDORSE OUR PUBLICATION OF THE PROPOSED CLEVELAND PLUMBING CODE.

At a recent meeting of the Cleveland Association of Master Plumbers, the secretary, Eb. Ellen, was instructed to convey to "Domestic Engineering" the unanimous vote of thanks given by the association for the publication of the proposed Cleveland Plumbing Code, which was printed in full in our columns in the issues of March 11th and March 18th. Much interest has been aroused in other states by this reproduction of the comprehensive code which has received so much attention from the Cleveland plumbers during the past four years.

LAWS URGED AGAINST THE "DEATH CUP" IN CHICAGO AND ENTIRE STATE OF ILLINOIS.

Six months ago, a school girl, 10 years old, put her lips to a drinking cup in a train between Chicago and one of her suburbs. Today the child is under daily treatment for a malady almost as incurable, and, in the mind of the average man, more horrible, than leprosy. She may never be like other little girls again.

Prompted by the menace of hundreds of cases similar to this every year, the medical authorities of Cook county are banding together for a relentless war against the common drinking cup. Enlisted in the onslaught are the deans of three medical universities, the public health

Next!

—H. King, in "The Chicago Tribune."

commissioner, the president of the board of education, the chief of the attending staff of the Cook county hospital, and scores of other thoughtful physicians.

The movement which these men have inaugurated will take the form of a campaign of education for the public.

With public sentiment aroused, agitation will be begun for two forms of legislation—one for the general assembly and one for the city council. The state will be asked to pass a law compelling the abolition of public drinking cups on all railroad trains that pass the boundaries of Illinois. The aldermen will be urged to enact an ordinance exiling the "cup of death" from the city of Chicago forever.

Already steps have been taken to get the desired legislation before the assembly for passage at this session. Steps have also been taken to get an ordinance before the city council of Chicago, Alderman Carl T. Murray of the 20th ward having signified his intention of introducing an ordinance prohibiting the use of the public drinking cup and providing for sanitary, up-to-date drinking fountains.

Dayton, O.—D. L. Pickrel, 123 Valley St., reports good opening business for the year. He will be well located in his new three-story structure, now in course of completion on Valley St. His establishment will occupy the lower floor, the upper floors being advantageously rented.

April 11 and 12, 1911.—The annual convention of the State Association of Master Plumbers of Kentucky, at Frankfort, Ky. The officers of the association are: President, Jacob Isaacs, Louisville, Ky.; vice-president, J. J. Fitzgerald, Lexington, Ky.; secretary-treasurer, Geo. F. Roser, 308 S. Third St., Louisville, Ky. Board of Directors: H. L. Nevins, Louisville, Ky.; Ed. Hannon, Paducah, Ky.; J. H. Adams, Harrodsburg, Ky.

April 17, 18 and 19, 1911.—The 10th annual convention of the State Association of Master Plumbers of California, in Fresno, Cal. The convention will be held in the A. O. U. W. Hall, and convention headquarters will be established at the Hotel Hughes. The officers of the association are: President, Thomas Haverty, Los Angeles; vice-president, Frank J. Klimm, San Francisco; treasurer, L. E. Firmin, 101 Gough St., San Francisco.

April 18, 1911.—The annual convention of the Pennsylvania State Association of Master Plumbers, at Johnstown, Pa. The officers of the association are: President, S. S. White, Pittsburgh; first vice-president, C. K. Will, Lancaster, Pa.; second vice-president, Robert Purse, Johnstown, Pa.; third vice-president, D. F. Durkin, Jr., Philadelphia; treasurer, John H. Birchall, Allentown, Pa.; secretary, R. E. Carson, 1827 Perrysville Ave., Pittsburgh.

April 20, 1911.—The annual meeting of the Northwestern Association of Master Plumbers, at Saegerstown, Pa. This association is composed of master plumbers in Eastern Ohio, Western New York and Western Pennsylvania and its officers are: President, L. R. Stone, Greenville, Pa., and secretary, M. C. Judd, Meadville, Pa.

April 21 and 22, 1911.—The annual meeting of the Washington State Association of Master Plumbers, at Tacoma, Wash. The officers of the association are: President, A. E. Ayers, Seattle; secretary, W. Westover, 313 Columbia St., Seattle.

May 9, 1911.—The 10th annual convention of the New Jersey State Association of Masters Plumbers will be held at the Union Hill Turn Hall, corner of Lewis St. and New York Ave., Union Hill, N. J. The convention will open at 10 a. m. The officers of the association are: President, George S. O'Neil, Paterson; secretary, H. F. Baillet, 191 Clinton Ave., Newark, N. J.

May 16, 1911.—Annual meeting of the West Virginia State Association of Master Plumbers, at Morgantown, W. Va. The officers of the association are: President, E. C. Wiedebusch, Morgantown; secretary, L. W. Joseph, Morgantown.

May 29, 30, 31 and June 1, 1911.—The 23rd annual convention of the National Association of Master Steam and Hot-water Fitters, at Hotel Sherman, Chicago. The officers of the association are: President, Charles A. Geoghegan, New York City; vice-president, Edward B. Denny, Newark, N. J.; treasurer, Juan A. Almirall, New York City; secretary, Henry G. Gombers, 260 West Broadway, New York City.

June 6, 7 and 8, 1911.—Third annual meeting of the National District Heating Association, at Pittsburgh, Pa., headquarters Fort Pitt Hotel. The officers of the association are: President Geo. W. Wright, Baltimore, Md.; first vice-president, A. D. Spencer, Detroit, Mich.; second vice-president, W. J. Grams, Seattle, Wash.; third vice-president, Warren Partridge, Springfield, Ill.; secretary-treasurer, D. L. Gaskill, Greenville, O.

June 13, 14 and 15, 1911.—The 29th annual convention of the National Association of Masters Plumbers of the United States, at Galveston, Tex., with headquarters at the Tremont Hotel. The officers of the association are: President, A. Selden Walker, East Orange, N. J.; vice-president, Alfred C. Eynon, Canton, O.; secretary, Samuel F. Wilson, East Orange, N. J.; treasurer, Wm. McCoach, Philadelphia, Pa.

THE NATIONAL ASSOCIATION OF MASTER STEAM AND HOT-WATER FITTERS CHANGES ITS CONVENTION DATE.

Henry B. Gombers, secretary of the National Association of Master Steam and Hot-Water Fitters, has just announced that the date of the 23rd annual convention of that organization has been changed. It will be held Monday to Thursday, May 29 to June 1, 1911, inclusive, at Hotel Sherman, Clark and Randolph Sts., Chicago. Secretary Gombers is located at 260 West Broadway, New York City, and he will be glad to send interested parties full particulars about the convention.

ARRANGEMENTS FOR THE MEETING OF THE PENNSYLVANIA STATE ASSOCIATION OF MASTER PLUMBERS.

Although the annual convention of the Pennsylvania Master Plumbers' Association, to be held on April 18th at Johnstown, Pa., will be in session but one day, there will be something doing every minute. Headquarters will be at the Crystal Hotel, but the business sessions will be held in the Grand Army Hall. Pittsburgh and Philadelphia delegations are expected to arrive on the evening of the 17th, and the convention will start on the morning of the 18th. No set program has been arranged, according to President S. S. White of Pittsburgh, neither has a slate of new officials been prepared. Roy Hirshey, 308 Horner St., Johnstown, is looking after the interests of the "invading party," and it is reported that some special entertainment features are on tap. Mr. Hirshey is secretary of the Master Plumbers' Association of Johnstown, and of course the bulk of arrangements is falling upon his shoulders. Several hundred delegates are expected at this convention. It is hinted that some important questions will be up for discussion during the business meeting, but the nature of these is not known. A banquet will probably close the convention.

ALBANY PLUMBERS PROTEST.

A delegation of Albany (N. Y.) master plumbers waited upon Mayor McEwan recently and entered a protest against the decision reached by the board of contract and supply lately to have the new high school erected through one general contract. The committee included Thomas F. Nolan, Albion Eckert, Timothy E. Kerwin, Frederick W. Ridgway and Horace F. Westcott. They argued that the contracts for plumbing, heating and wiring should be awarded separately in order that Albany contractors could have a better opportunity to secure a portion of the work provided the building in general should be erected by an outside concern. The mayor informed the delegation that the board gave the matter careful consideration before it acted, but that he would again bring it up for discussion.

Albany, N. Y.—At its next regular meeting it is expected that the board of contract and supply will take some definite action in the matter of the electric lighting question. It is over a month since the Municipal Gas Co., a private corporation, submitted a bid for another five years' service, but there has been so much objection to a renewal of the contract on the part of civic and business organizations that the city officials have delayed action. It is claimed the price is excessive and it is suggested that the matter be referred to the public service commission and the contract be let for a one year period only. In the meantime the advisability of the city establishing a plant of its own is generally advocated, as it already owns the poles and lamps.

The editor had been unusually patient, but it was the third visit he had received within a week from the long-haired young man. "You might at least give me some suggestions about the two principal poems, 'Dying Love' and 'Autumn Fires,' if you cannot accept them in their present form," persisted the visitor. "The only suggestion that occurs to me," said the editor, wearily, "is that you might throw the first one into the second, and let me know what happens."

Relation of Soil and Vent-Pipes to Frost Closure*

By W. B. Gray, Louisville, Ky.

It is the practice in many localities, even by ordinance in some, to enlarge vent-stacks one size regardless of the size, before extending the stack through the roof.

The writer does not believe in increasing 5-in. stacks or larger at all, and he is of the opinion that 4-in. would very rarely require enlarging to prevent closure by frost; that it would be wise to restrict enlargements to the increasing of all sizes less than 4-in. to 4-in. diameter until definite data from experiments dictate a change.

By request, the writer has figured a little on the merits of the elements supporting his personal opinion. Much of the matter necessary to establish any sort of premises to dwell on is dry matter for an assembly and best read at leisure, but it is none-the-less necessary in an effort to support the opinion expressed. The subject appears innocent of difficulty at first glance, but proves so involved and complex in various phases that nothing short of a volume would do it justice. A brief paper is therefore, of necessity confined to a mere launching of the subject that touches but a few of the high points, with the hope of leading the question into the limelight where it may receive more competent attention. The field is so broad, even for this purpose, that it is hard to hold the subject in view with continuity enough for convention interest, and I trust to a verdict from leisurely individual reading. The whole matter deals largely in generalities and rough approximates. It is not intended in saying this, to convey the impression of haphazard procedure, but there is no pretense of exactness, anywhere. Though some of the work was susceptible of very close figures, the admitted necessary errors of the whole overshadow fragmentary exactness too far to make striving for it worth the while for this purpose.

Atmospheric humidity, temperature of the pipe surface, percentage of dry interior, hours of partial dryness, and amount of available heat diverted, will always be problematical to some degree and the result of deductions from theoretical premises will vary from actual performance accordingly.

The various systems of soil and vent work, and types and uses of buildings, all contribute to the list of conditions encountered in practice. Either the building or the system may be conducive to high humidity of vent-air at exit or act to reduce it. The vapor of the incoming air must always be carried and however high or low the humidity, practice is in some degree against the chances of deposition,—that is, it lessens the probability of dew-point prevailing at vent end,—the first step in congealation of vapor to ice. If both the building and the system operate against humidity, the issuing air may be excessively dry; if both favor it, the moisture may mark the other extreme. Humidity in vents being subject to condition of atmosphere, type and use of buildings and type of system, there are all imaginable degrees of humidity possible between the extremes, yet always, I think, with results that justify the omission of increase at outlet end of vent in all but rare cases on stacks 4-in. and larger.

Some of the obstacles to definite statements on the subject become apparent by inspection of the relative carrying capacities of different sizes of pipe given in table "A," which shows the number of smaller pipes aggregating in area that of the larger, and also the larger number of small pipes one larger is equivalent to when friction is taken into account, together with a rough comparison of relative areas and superficial interior surfaces of the several sizes of pipe most used. The ratio of warming-surfaces to contents varies with the size, and governs more or less the degree of humidity and amount of vapor carried per hour. The height of stack, percentage of warmed portion, percentage of dry pipe, initial humidity, and temperature of the building also affect the result and may work together in one direction, or counteract each other, according to conditions.

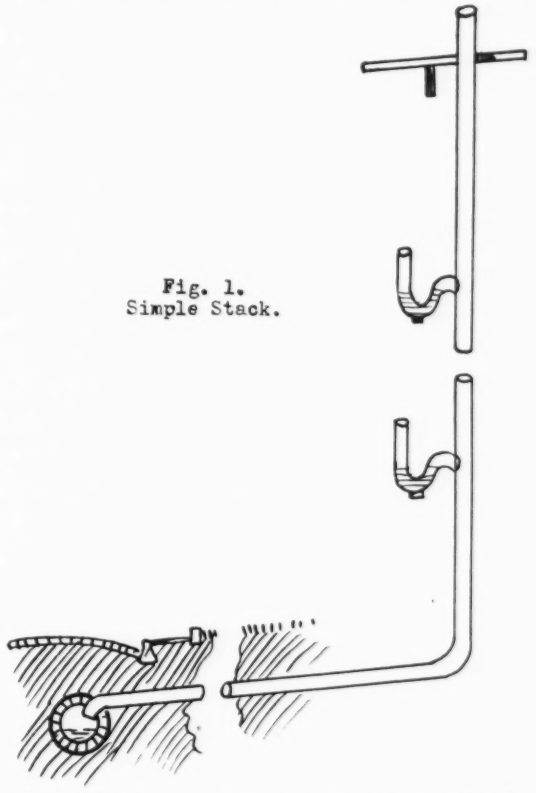


Fig. 1.
Simple Stack.

Table "A"—Relative Area and Circumference of same and other Sizes with reference to carrying capacity, heating effect, etc.

Size pipe, diameter, inches	2	3	4	5	6
Eight-inch—					
Capacity friction inc. equals	32	12	5.7	3.2	2.1
Approximate aggregate area of	16	7	4	3	2
Approximate aggregate circ. of	4	3	2	...	...
Six-inch—					
Cacapity friction inc. equals	16	5.7	2.8	1.6	...
Approximate aggregate area of	9	4	2	...	...
Approximate aggregate circ. of	3	2	...	...	...
Five-inch—					
Capacity friction inc. equals	9.8	3.6	1.8	...	...
Approximate aggregate area of	6	3	...	...	...
Approximate aggregate circ. of	2	...	...	...	...
Four-inch—					
Capacity friction inc. equals	5.7	2	...	...	...
Approximate aggregate area of	4	...	...	...	...
Approximate aggregate circ. of	2	...	...	...	...
Three-inch—					
Capacity friction inc. equals	2.7	...	...	...	...
Approximate aggregate area of	2	...	...	...	...
Approximate aggregate circ. of	...	...	...	...	...

As to vapor carried—the material for frost closure—several random examples work out about as follows under the assumed conditions named:

*Read before the sixth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held in Milwaukee, Wis., Feb. 6, 7 and 8, 1911.

Case 1—Atmosphere 12 deg. F.; humidity 30 per cent; air taken at fresh air inlet; stack 4-inch, 150 ft. high, with 120 ft. warmed; house 70 deg.; temperature difference between stack air and atmosphere 58 deg.; mean stack and rooms temperature difference 41 deg.; initial vapor about ¼ lb. per hour,—at 70 deg. and saturated would be over

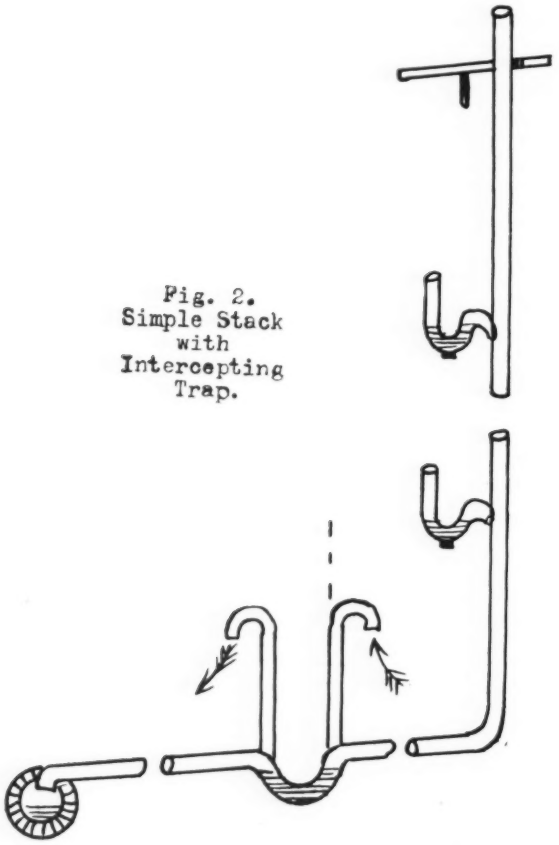


Fig. 2.
Simple Stack
with
Intercepting
Trap.

5 lb. per hour; velocity 1,000 feet per minute; 5,000 cu. ft. per hour. At 41 degrees difference, 120 sq. ft. make 7,872 B.t.u. available per hour. Changes of air in stack per hour, 400; changes in heated portion 500; time of change in heated portion 7 seconds, and heat absorbed per heat change, 7.4 B.t.u., making the maximum possible for air 3,700 B.t.u. and leaving 4,192 units,—not more than enough to furnish heat for the possible vapor called for under the conditions assumed. It is obvious that saturation of the delivery is not accomplished or that 70 deg. in the stack is not realized. In the latter case, reduced velocity and volume would prevail, calling for less vapor, and proportionately less heat to raise the humidity. In practice, I am sure a very generous portion, say half or more, in a high building, of the heat available is diverted in the shape of sensible heat in water clinging to the interior of the stack being washed down, and in vapor condensed by discharges of cold fixture water.

Case 2—Assuming practically the above conditions, with 30 deg. difference between stack delivery and atmosphere, we have something as follows: 3,650 cu. ft. volume per hour; saturated at 12; ½ lb. vapor,—at 30 per cent 1-6-lb. vapor. Hour volume raised 30 deg. and to saturation, 1.6 lbs. water vapor, requiring 1,610 B.t.u. for the vapor or 3,599 for air and vapor, leaving 4,561 units of the 8,160 units available. These conditions, with the extra heat assigned to diversion and discrepancies, allowing 40 closets and complement of lavatories, urinals and slop sinks, used about as the average office building fixtures are, come nearer to what would actually take place than the deductions resulting from the assumptions of Case 1. The account for surplus heat, not taken by air and vapor in Case 2 we must consider the type of surface, difference of temperature between inside and outside of wall of stack; wet interior of warmed water, at 70 deg. or less down to 50 deg., washed down by fixture water; and, vapor condensed by fixture water, all together, I believe, equal in depreciating heating effect and diverting heat from the air and vapor, to the difference between heat available and that taken by the air and vapor.

Of the vapor carried at the vent end, something like 1-10th-inch adjacent to the circumference, say 1-10th of the area may be taken as constituting the depositing area; in this envelope of the contents impinging on the rim of the hub, as expanding outward, say of the 38 lbs. of water per day of 24 hours, 1-10th of 3.8 lbs. would have a chance to congeal. Expansion cools the air, a step toward the dew-point. If the dew-point is passed the latent heat of the vapor condensed is liberated and the tendency to further condensation counteracted. The higher temperature over roofs of heated buildings is also against frost.

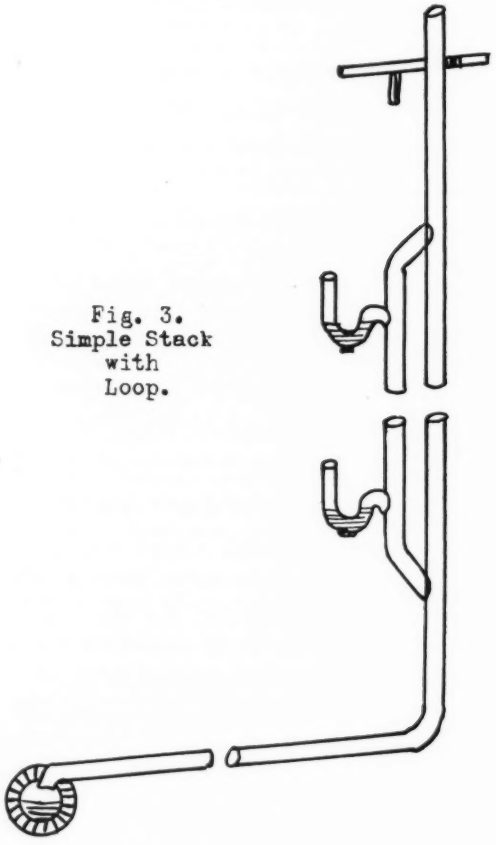


Fig. 3.
Simple Stack
with
Loop.

Sun heat tends to remove any frost that forms at night. During the unfavorable hours under these conditions, I do not believe more than a 1-3-lb. of vapor would as above be frozen and most of it would vaporize again during the favorable hours of the day. At night when conditions are most in favor of depositing, the stack dries out from non-use and the water available for vapor is much

reduced, and the higher temperature of the vent-air resulting makes for its escape without depositing. With a "dry" vent line, or any of many other favorable conditions in daily practice, the result would be even more decidedly in favor of not increasing vent extensions—except the line is less than 4-in. than these deductions indicate.

Case 3—Conditions assumed: Atmosphere 12 deg.; incoming air from sewer at 50 deg. and saturation; house, 70 deg.; 4-in. stack, 40 feet high; heated portion 25 feet; 58 deg. difference in stack air and that of atmosphere: 500 feet velocity per minute; 25 sq. ft. heating surface at 1.6 B.t.u. per degree difference for 20 deg. change equal 807 B.t.u. available. 30,000 lin. ft. per hour, equal 1,200 changes of contents in the heated portion (750 changes for the stack); a given change, equaling 2.08 cu. ft. would have time to absorb about 2-3 to ¾ of a heat unit in the 3 seconds required for it to pass through the heated part. Assuming saturation of the air it would contain little short of 1½ lb. of vapor at 70 deg. and would take nearly twice the heat possible, were the pipe surfaces at their best. How the heat transferred in this case would actually be divided would be hard to determine without practical tests under such conditions. The 20 deg. rise is not realized or the initial humidity decreases,—doubtless both features would be present to some degree. The velocity due to the temperature difference between the sewer air and atmosphere will be maintained in any event, because the decreased weight due to temperature rise is always greater than the increased weight due to the load of vapor necessary to maintain saturation. Less heat than assumed would decrease velocity and leave some margin. Any

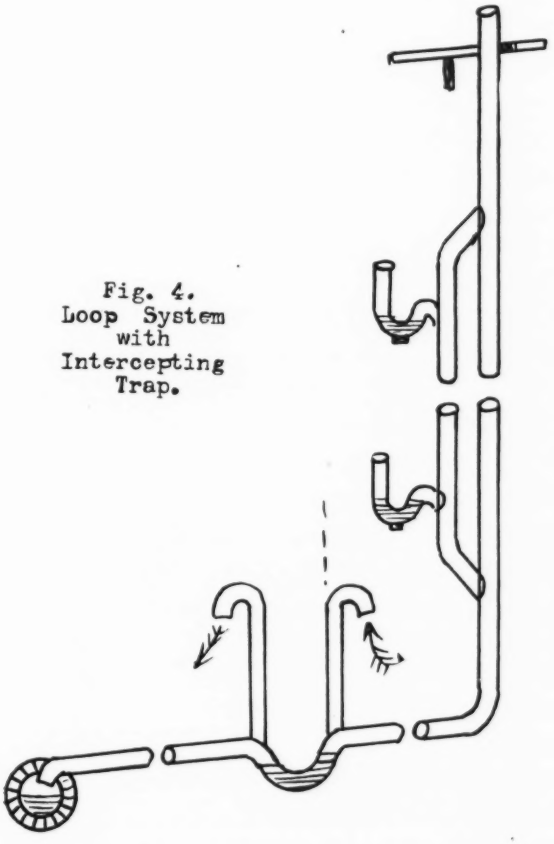


Fig. 4.
Loop System with Intercepting Trap.

portion not taken by the air in so short a stack, would be washed down as sensible heat in water clinging to the interior,—very little would reach the vapor stage. Whatever amount of vapor may pass would be affected by the causes already mentioned. The dew-point, it may be added is generally thought of as simple contraction from loss of heat from air not saturated to a point of saturation

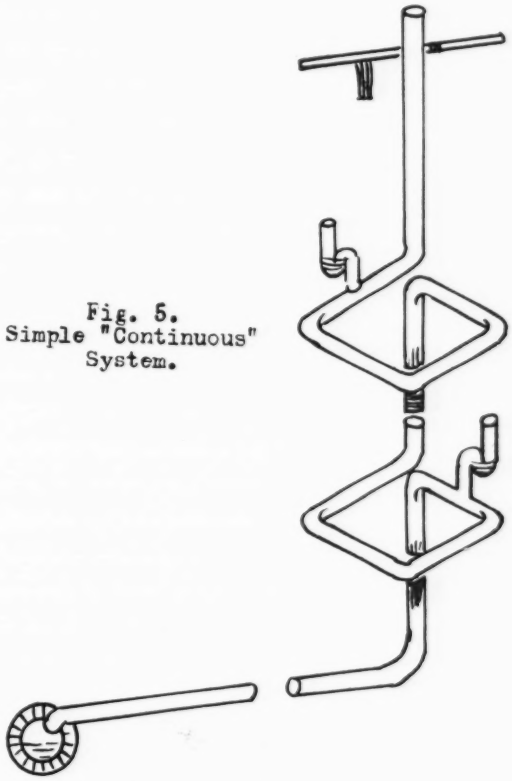


Fig. 5.
Simple "Continuous" System.

below which deposition takes place; the vapor deposited giving up its latent heat and raising the temperature of adjacent air and thus raising or holding it above the dew-point for a time, when cooling or recooling causes further deposition, etc. The effect of cooling by expansion, as all of you with "air" experience know, is well illustrated by ice forming in the ports of air motors because of expansion lowering the temperature, even to zero, where preheating is not resorted to; but in soil vents we have no high pressures to create such reduction of temperature, and if any frost is formed there is no high velocity to restrict its adherence mechanically. Mist in suspension or adhering, through the liberation of heat by its formation may, however, aided by the sun in daytime, extra heat over the roof, and reduced vapor at night, check and hold off the formation of ice, in the mouth of the vent, to such an extent as to tide over severe cold spells without appreciable reduction of an unenlarged vent of four inches or more in diameter, regardless of the height of the stack.

In soil-pipe ventilation if the air reaches dew-point it is principally near the wall of the pipe or hub (except in increased vents) and is generally due to cooling from expansion at the point of increased area whether such be an increaser hub at top, or atmosphere, making it possible for the outer surface of the current to be contracted to the dew-point while yet in the neighborhood of the metal.

Saturation has been spoken of and assumed in these

cases but it must be remembered that even in a simple stack there is always more or less heating surface above the wet level, in which the contents are raised above saturation. This favoring point is one of the reasons why the writer avoids increasing large vents or extending them far above the roof, where possible, and would prefer to increase, when necessary, low enough down for the heat-

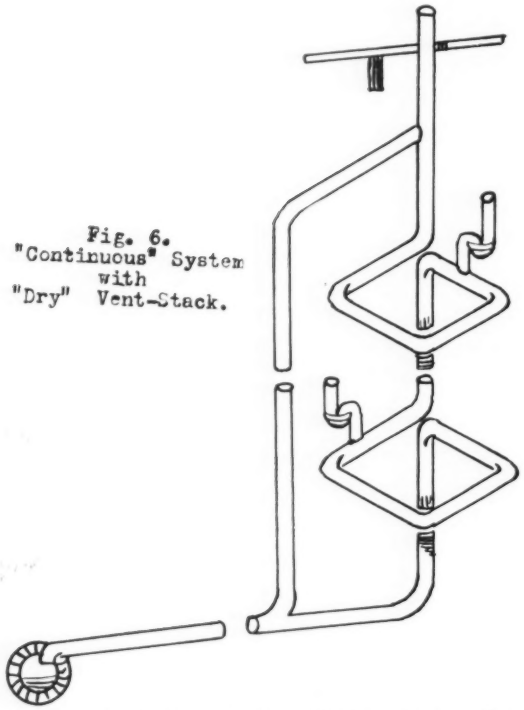


Fig. 6.
"Continuous" System
with
"Dry" Vent-Stack.

ing surface to restore the loss of temperature. Vapor beyond saturation is impossible, in any building, and high building jobs usually have the advantage of dry vents to help.

If a stack divides and reaches the roof in two or more places the initial humidity is divided accordingly and the humidity at exit would average less for all, though the initial vapor carried by one may be more or less than its share apportioned by areas and friction.

Case 4—We cannot infer from the figures on a 4-in. stack what the behavior of any other size will be, as the ratio of surface to contents varies and the velocity and heat vary accordingly. With a 2-in. lavatory line 40 ft. high, with 25 ft. of it warmed by 70 deg. room temperature; outside air, 12 deg. and 30 per cent humidity, we have;—taking air through an inlet 375 ft. velocity per minute, 375 cu. ft. per hour, carrying about ½-oz. vapor. 900 changes of air in the heated part at 4 seconds per change for a rise of 30 deg. equal 500 B.t.u. available of which the air would take about 210 B.t.u. The volume at saturation would contain about 2½ oz. vapor and require about 160 units, leaving in the neighborhood of 130 units, of the 500 units available, for diversion. In practice, the velocity, volume and temperature rise would likely be less, leaving more heat for the before-mentioned elements other than air and vapor. For 30 deg. rise at saturation about 4 lb. of vapor per day of 24 hours would pass. Referring back to causes, presumed to operate against the formation of ice, it appears that in this case a 2-in. pipe is not likely to give much trouble if not increased.

In earlier days very small vents with inverted ends, not increased, were used. The writer does not remember ever seeing one closed by frost. Perhaps none of you do. The frost adhered largely to the exterior surface near the bottom and likely often favored dew-point in a way to keep inner moisture, through liberated heat, above freezing point in the mouth of the vent.

As a means of ready inspection of the probable relative conditions in some of the systems in use, seven diagrams have been made as a basis for table "B." The relative values of the elements considered, as given by the table, are arbitrary and represent the writer's approximation by inference:

Table "B"—Approximate Values of Temperature Humidity and Heating Surface In Soil and Waste Systems.

		RELATIVE					
	Temp. Conts.	Temp. Initial Air.	Temp. Air at Exit.	Intitial Hum.	Hum. at Exit.	Htg. Sur.	Dry Htg. Sur.
Fig. 1	Med.	High	Med.	High	High	Small	Small
Fig. 2	Low	Low	Low	Low	Med.	Small	Small
Fig. 3	Med.	High	High	High	High	Med.	Great
Fig. 4	Low	Low	Med.	Low	Med.	Med.	Great
Fig. 5	Med.	High	Med.	High	High	Great	Small
Fig. 6	Med.	High	High	High	Med.	Great	Great
Fig. 7	Med.	Low	Med.	Low	Med.	Great	Great

If it be proven beyond a reasonable doubt that it is useless or worse, to increase vent terminations, 4-in. and larger, the revision of an ordinance would be simple. If it be detrimental to increase vents, 4-in. and larger except under certain conditions, then the velocity and maximum of vapor allowable, etc., to keep within bounds should be named.

If the plumbing fraternity is reluctant to solve its own problems, let it resort, as it would have to, like contractors of many other lines, to consulting engineers who can solve them, and if it is found a sliding scale of maxi-

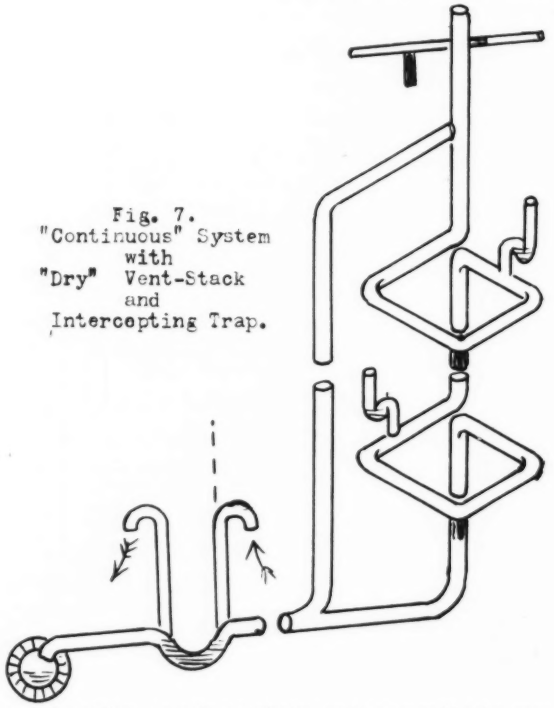


Fig. 7.
"Continuous" System
with
"Dry" Vent-Stack
and
Intercepting Trap.

mum humidity; or volume of air per hour would take care of frost conditions in buildings of different types better than fixed increases at vent ends for all cases, as is now general, let the ordinances be so framed regardless of whom it may inconvenience. Let me say in conclusion that this subject, vents and their increase at exit, is worthy of more attention than has usually been given it.

A PRACTICAL MANUAL OF STEAM & HOT-WATER HEATING

BY EDWARD RICHMOND PIERCE

In this installment Mr. Pierce notes the differences between steam and hot-water jobs which the fitter must consider to get satisfactory results. A hot-water job requires even more care than a steam job in the selection of the proper boiler for the particular installation, and Mr. Pierce, in giving the facts forming the basis of the theory of hot-water circulation, supplies the principles by which the entire installation must be figured.

SECTION XXXVIII.

The two things that the steam-fitter must consider with care when he is to select a boiler, that the hot-water fitter is not required to consider particularly, are, pressure at the boiler and pressure at the point where the point of equalization occurs in the piping. The new ratings having brought the maximum temperatures of the two heating mediums within 40 deg. Fahr. of each other, the hot-water man who is required to show a saving in fuel as compared with the steam job of same size, needs to know the positive value of each and every step in the construction of a hot-water apparatus.

The first thing he must consider, with even more care than the steam job requires, will be the boiler. While he does not have to figure primarily on boiler pressure, as shown on a gage affixed to the boiler, we shall find that height of the water in the boiler, as well as the quantity of water that the boiler contains, may be of commanding importance for an individual installation.

In order to make this clear it will be necessary to study the principles involved in the circulation of hot-water which is heated at one point and then circulated through pipes back to the point of heating, to be heated again to the higher temperature, that the circulation may continue.

In a general way, almost every one has an idea, which is more or less correct, in regard to what produces the circulation in a hot-water job. But it is important that the exact view of the question, upon which the statements that will follow in regard to hot-water heating are based, shall be fully set forth at this time in order that no confusion of ideas shall occur. The necessity of this will be all the more apparent when the fitter comes to consider the question as to whether or not he will add to his piping any one of the so-called "heat-generators," "heat-retainers," "circulation-accelerators," and other descriptively-named patented articles, which from time to time appear on the market. The first thing, then, is to get a clear idea of what produces the circulation of the water in an ordinary heating job, and then to examine into the things that either retard or improve the circulation of the water as a heating medium.

The foundation of the theory of hot-water circulation in pipes is based upon three facts: First, the fact that one cubic foot of water at the temperature, or point of its greatest density, or at 39.2 deg. Fahr., weighs at the sea-level nearly 62½ lb. (62.425), while a cubic foot of water at 212 deg. weighs not quite 60 lb. (59.844 lb.) (Encyclopædia Britannica, Vol. 12. Page 480; Subject, Hydromechanics). There will be found slight variations in tables presented by different authors as to the weight of one cubic foot of water at different degrees of temperature, but the change from the table KZ is so slight that it does not affect the results of the needed calculations for a small heating apparatus and need not be considered as of moment in the present discussion.

TABLE K. Z.

Weight of 1 cubic foot of water at the various tem peratures usually found within the range of house heating by hot water.

Temp. of Water Deg. Fahr.	Wt. in Lb. of 1 Cu. Ft. Water at this Temp.	Relative Volume
40	62.42	1.00001
50	62.41	1.00025
60	62.37	1.00083
70	62.31	1.00196
80	62.23	1.00334
90	62.13	1.00497
100	62.02	1.01491
110	61.89	1.00901
120	61.74	1.00748
130	61.56	1.01409
140	61.37	1.01678
145	61.28	1.01828
150	61.18	1.01983
155	61.08	1.02145
160	60.98	1.02309
165	60.87	1.02480
170	60.77	1.02656
175	60.66	1.02836
180	60.55	1.03024
185	60.44	1.03213
190	60.32	1.03414
200	60.07	1.03820
212	59.76	1.04332
220	59.64	
230	59.38	
250	58.81	
270	58.21	
300	57.25	

The above table has been prepared by taking items from a number of different authorities who gave the formula used in preparing their tables, and is believed to be sufficiently accurate for the work to which it should be applied. No one should attempt to seal a job to a pressure of 65 lb. actual or 50 lb. gage pressure, which is about what 300 degrees temp. would mean. The table has been carried to that point because among some of the cut-throat-sell-them-cheaper concerns the size of piping sent out with the material, as well as the size of the radiators used, indicate that that pressure is intended.

The second fact is that if heat is applied when water is at its point of greatest density at the sea-level, the water soon begins to expand, to occupy more space than it did at 39.2 deg. temperature. In other words, the mass of water is actually bigger than it was before the heat was applied and it keeps on growing larger in its mass, or

expanding, until it reaches its limit of expansion at 212 deg. if it is not confined in a closed apparatus. When the water is confined in a closed apparatus in such a manner that the water at no point is in contact with the atmosphere, the pressure that can be exerted by the continued application of heat is bounded only by the strength of the material that composes the envelope.

The third fact is that when water is at its point of greatest density at the sea-level, or at about 40 deg. Fahr., it is also at its point of greatest compressibility. This fact is of the utmost importance to the heating profession. This last fact is at the very bottom of the whole hot-water heating problem. No man who intends to do hot-water heating has any right to overlook this tremendous fact in nature for one single moment when he is considering the question of the piping outfit for a given job.

One cubic foot of water at the sea-level at its point of greatest density has been compressed by the strength of Nature into the smallest compass that it can occupy. If the pressure of a column of water a mile in height should be applied to it the amount that it could be compressed would not be enough to permit the addition of another half-pint of liquid into the cubic foot that was under pressure. It was compressed to the limit when it just filled the cubic foot of space at the sea-level at 39.2 deg. Fahr. and atmospheric pressure only applied. So little, in fact, has this matter of the utter impossibility of compressing water into a smaller compass by pressure, and the constant expansion in bulk, or mass, under the application of heat been understood among the trade that it is a very common thing for the fitter engaged in the hot-water heating business to tell the prospective customer that the difference in weight between the hot and cold water produces the circulation. While this difference in weight is one of the things that tends to produce the circulation it is far from the only thing or the most important thing in the phenomenon of circulating water through pipes for heating purposes.

(To be continued.)

THE INSIDE OR THE OUTSIDE MAN—WHO'S WHO?

By "North Du Pont."

Oftentimes this question about the "inside" or the "outside" man has arisen in the minds of merchant plumbers. They have pondered as to whether the good man they have in the office should be put on the outside and a "cheaper" man put in the office. This is a very deep question, and again I might say that it is not, for why not have a good man on each end? That is, if you have two men. I claim, and it has been pointed out, that it is just as necessary to have a good man in the office or store as it is to have a good man on the outside job. Now, let's get down to the small shop that is desirous of making a success in business, hasn't much capital and can't afford to lose any money. This is where the question seems hardest to answer, as there are so many different kinds of small shops. But let us take the average shop, say one that employs from 5 to 10 men in the dull season and from 10 to 25 men in the busy season, and, let us also take into consideration that this shop does quite a lot of repair work and doesn't carry a large stock.

This shop generally only has one man (that is besides the proprietor) and as this one man is generally the bookkeeper, collector, estimator and clerk as well as buyer and stock-keeper, it is very important that he be a good man, not only on the outside work, that is, collecting and estimating, but on the inside work of meeting customers, showing and selling the goods.

In places where two men are employed, one on the outside acting as estimator and foreman and the other on the inside as bookkeeper, buyer and salesman, both of these men are of equal importance in the success of the business. Now, most everybody knows that the outside man has got to be, and generally is, a good man and gets the pay of a first-class journeyman and sometimes a little more. All of the outside men that I have met, get from $100 to $150 a month, the year round. But with the inside men it is different, that is the wages. I have met "inside" men that were getting $100 and some $125 a month and have also met some that were getting only $60 to $80 a month, and right here let me say, that the places that were paying the good wages, or I might say fair wages, from $100 to $125 for inside men, seemed to be doing the business and making the money.

Now, there is no need of my going into detail explaining why this is so, for most of you know that a penny saved is a penny earned and goods well-bought are half sold, and that's where your inside man comes in, on the buying. You also know that a silk-hat would look out of place on a ragged hobo. The same way with your good inside man. What's the use of bestowing the title of buyer or bookkeeper on him if you fail to pay him the "dough," that is, fair wages which he is entitled to. The inside man makes money for you by showing the merits of your goods, getting good prices, holding trade (not driving trade away) and last but not least, by handing out the right goods to your men. Treat your inside man right, pay him well and you will not only have a good man for a month or two but for a long time, and one that will work his head off for you and one that the customers will like.

In conclusion I would like to tell you about an advertisement which had two heads on it, and this company had two offices. The sign read: "You can meet us face to face, there's one of us at either place." And so it is with the plumbing business, if you have two men, have one at either place, that is, one on the outside and one on the inside, and let them both be getting good pay. In case you appoint yourself the outside man and hire only one man (for inside work mostly), let this man be a good one. Don't bother with cheap men and expect to make a success. Those so-called cheap men will cost you the most in the end, and you will eventually employ a good man, so why not get a good man right at the start? You may think that you can't afford a good man on the inside in the retail plumbing business, but that is where you are wrong.

Most of the big concerns in other lines pay just as good wages and even better for their inside men than they do for their outside men. I have a case in mind: A wholesale plumbing house pays the inside man who attends to country trade $300 a month, their inside city-salesman $200 a month, their bookkeeper from $100 to $125 a month, their credit man $150 a month and their outside men, that is salesmen, from $75 to $150 a month.

If the wholesalers can pay just as good wages for their inside men as for their outside men, you, the merchant plumbers, can do likewise. Now do it!

An orator stated that "the worst enemy any cause can have is a double lie in the shape of half a truth"; and the newspaper reported it "a double eye in the shape of half a tooth."

FALSE BOILER-RATINGS STILL UNDER FIRE.

Editor "Domestic Engineering":—Referring to the table of boiler-ratings on page 224 of the March 4th issue of "Domestic Engineering," please note some of the results of allowing boiler-concerns to make their own tests:

Diameter of Grate in ins.	Value given the third section in sq. ft. A's	B's	C's
19	100	125	75
22	100	225	75
25	50	200	100
28	125	175	200
31	150	450	
34	175	400	

In B's column a 22-in. third section is given a value of 225 ft., while a 25-in. third section shows 200 ft. and the 28-in. only 175 ft.

The 31-in. third section is given a value of 450 ft. and the 34-in. only 400 ft.

These inconsistencies are shown in the different sizes of the same boiler and still they swear that the ratings are based on actual tests and expect the public to believe it, while the poor fitter pays the freight.

From two steam-boilers shown in the same catalog we get the following data:

	Volume in cubic inches	Weight.	Rating.
No. 1.	336000	12750 lb.	5050 ft.
No. 2.	295000	9300 lb.	5000 ft.

You ask why they do it? Simply to get 1½c per pound more for their iron. In 15 years the rating of a 19-in. round water-boiler 50 in. high has been raised from 400 ft. to 750 ft. and the lid is still off. If in olden times a sucker was born every minute their rate of increase has the best known microbe-performance beaten to a frazzle.

The trade can have that which it demands. Why not organize and secure honest ratings? Very truly yours,

B. O. Iler.

THE QUESTION OF RELIABLE BOILER RATINGS.

Editor "Domestic Engineering":—In making proposal for a heating job in which he is naming, say, 500 sq. ft. of radiation, and is obliged to name a size of boiler claimed to carry 800 or 900 sq. ft., the heating man is put in the awkward position of telling his customer that all the boilers are sadly over-rated.

We have to go back to the days of the "Carbon Club" when the men with soft pencils, limited time, but evidently without practical experience or test, fixed upon a plan that instead of lowering the rating made it worse by raising same.

In the mind of the writer, there is one simple and proper way to find the rating value of a boiler, viz., evaporation test based on some well known grade of fuel.

In house work, we want a boiler or heater that will make a 24-hour "run" on, say, three coalings in zero weather. With three good fillings and not over five shakings, it should constantly maintain a steam pressure of two or three lb. or water temperature of 175 deg. The placing of any boiler that requires more fillings or more frequent shaking should not be advised.

To find the evaporation power of your boiler is an easy thing, filled and fired as here stated. Say whether based on hard coal or Pocahontas and let the dealer make his own estimate on any other grade of fuel he may locally use.

The fire-box should be sufficient in size not only to provide for the night use, but hold fuel enough for a morning start before coaling.

We have started in on house-heating and our reflections particularly concern same. In larger work, such as churches and public buildings in which heat is entirely off at night, the coal-carrying feature is not so pronounced as applied to night "run."

The great discomforture and damage now following prevailing ratings is: First—The necessity on the part of experienced dealers for explaining why they estimate on heaters seemingly larger than called for and larger than their experienced competitor would use. Second—The tendency of many, and the certainty of the new man, to accept present ratings as safe. Every day somewhere there is a beginner in the business, and while he is cutting his wisdom teeth, deficient sizes go in to the detriment of both the maker and the trade.

Finally, we say, if makers will not give evaporation tests, let them do the next best thing, viz., give fire-surface, grate-surface and fire-box size. The experienced man can make his own conclusions on the quantity of the fire-surface.

These remarks are brought out from a 35-year experience in boiler placings.

Grand Rapids, Mich. W. C. Weatherly.

OF COURSE YOU CAN USE A PIPE FOR A LEVER.

Editor "Domestic Engineering:"—On page 228 of the issue for March 4th, the practice of screwing a short piece of pipe into a fitting and using it for a lever with which to screw it on another pipe, is condemned, but the incident may not be closed yet. I am not a traveling steam-fitter, but have charge of a 500-h. p. steam and electric plant, where there are many steam, water, gas, and air pipes.

It is necessary to do a considerable piping each year, and every job that we do is to be used by ourselves, which in some respects is quite different from doing them for somebody else. We have fairly good tools, and can get new ones to replace worn and broken specimens, with little trouble.

Suppose that a 1½-in. galvanized ribbed ell is to be made on a galvanized pipe. The pipe is put in the vise, cut to required length, and a thread cut on it. The ell is then turned on by hand as far as it will go with such a short purchase. If you give a helper a pipe wrench and tell him to screw the ell on tight, he will take about eight bites to one revolution, hence when the ell is on, one rib will be well chewed up. A cast-iron ell looks nearly as bad under the same conditions.

Of course if we were doing this job for somebody else and they did not care for looks, no fault would be found, but here the case is different as we like to have our work look neat when finished. On this account we find it much better to screw a short piece of pipe into the ell and use it for a lever.

The result is that when the job is done the ell is not damaged. The round pipe is much easier on our hands than a narrow steel bar without a wooden handle, as many pipe wrenches are now made. If any reader does not believe it, try it both ways and see. The fact that it is easier, makes it possible to get a tight joint with much less exertion. We do not adopt the idea that our utmost strength must be exerted on whatever we use for this purpose. If we have a piece of pipe 3-ft. long we do not pull as hard as would be necessary with an 18-in. wrench. Furthermore, the fact that a piece of pipe will screw into an ell shows that the thread is not damaged, and if it will not, it is much better to find it out at the vise, than to wait until a distant part of the plant is reached, and then be obliged to return to the vise and get another ell. For these reasons we prefer to use the pipe method on all convenient occasions.

W. H. W.

SOME ANSWERS TO QUESTIONS RELATING TO HIGH AND LOW-PRESSURE WORK.

Editor "Domestic Engineering":—Referring to the set of questions concerning high and low-pressure work which appeared in a recent issue of your journal, kindly permit me to submit the following comment:

1. On high-pressure work, do you use any precautions, in order to avoid leaks, that would not be used on low-pressure work?

Surely. Why not? It may be that all work should be done with the idea in mind that it should be able to withstand any test that may be applied, nevertheless is it not human for a man to gage himself, at least at times, according to his knowledge of the pressure he expects to be applied? It would seem to the writer that there is a something that tells the experienced fitter to watch out for the things that may cause leaks on high-pressure work as compared to low-pressure work. My own experience along this line has been more with water-piping than with steam or hot-water fitting.

2. Have you preference for any "dope" in the general practice? Don't give its name (if of commercial brand), but you can describe and state reason.

None in particular, although if I were to show a preference I would choose a good quality of graphite compound, not so much because I believe it possesses any virtues as far as preventing leaks is concerned, as because I judge from experience with it, that it allows the joint to be easily separated if occasion arises at some future time to require it. While speaking of dope, how about the receptacle for keeping it in? There is, I think, room for improvement along this line, as the average dope-can is found to be anything that may be around that's handy. Why not make up a couple of dozen cans that would have the appearance of having been intended for the purpose for which they are used and furnished with a brush with which to apply the dope? Fix things so that there will be a few extra cans around where they will be handy when needed, and always give the vise bench the benefit of one can that can be left there for use at the vise bench only. Speaking of dope, an excellent dope may be made from a composition of red-lead, white-lead, and linseed-oil. Mix it up so that its consistency will allow it to be applied to the thread freely and still not have it so thin that it will run all over everything. A small quantity of turpentine added to this mixture fixes it so that it will run in and adhere in good shape to the threads. The mixture described does not quickly harden or cake in the can, and readily tempers up by the addition of a little oil. For details of a convenient dope can, see Fig. 1. Please note that it has a handle and a piece of wire placed across it near the top on which the surplus dope may be scraped from the brush.

4. What means have you used to take care of the pipe expansion on a big job of this kind?

Allow for it in every case in the direction of its length; allow 1 in. clear space for every 70 ft. of length. On risers, use swing joints.

Fig. 1.

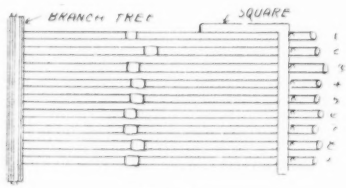


Fig. 2.

5. On particularly long runs of coils, what means did you make use of in order to obtain the correct "pitch"?

Be sure you give it enough, and if you can find anything to measure from locate the approximate pitch by measurement and verify this by placing the level on the coil when it is set up temporarily.

6. What is the longest steam coil that you ever built, or helped to build? Tell us how you went at the task. What was the amount of expansion in that particular coil? How did you anchor it?

About 40 ft. For a manifold coil with horizontal expansion end, mark the two points determining the desired length, lay the branch header on the marks and begin at the end opposite the miter corner. Screw this length of pipe into place as hard as desired; that is, home as hard as you intend to have them when finished. Overlap the point at the end at which you will turn to catch the other header. Locate on either the upper or lower pipe forming the coil the exact point of the end of the thread, that is, the end of the thread on which the elbow will make on to make the turn. Then with a square mark across from this point all the pipes forming the coil; mark each pipe with a number corresponding with its position in the coil (Fig. 2) and then remove each of these and cut the threads, using a die that will cut the same thread every time. Replace the pieces in their proper places and for the elbows on the ends select right and left elbows from the same batch of fittings, so that it may be reasonably expected that they will each make on about the same distance, and proceed to finish the coil. It may take a little time to go about it just this way, but it may save a little time before you get through with the job.

7. In your experience in coil work, what is the handiest wrench that you made use of?

A good husky alligator jaw wrench is a handy tool.

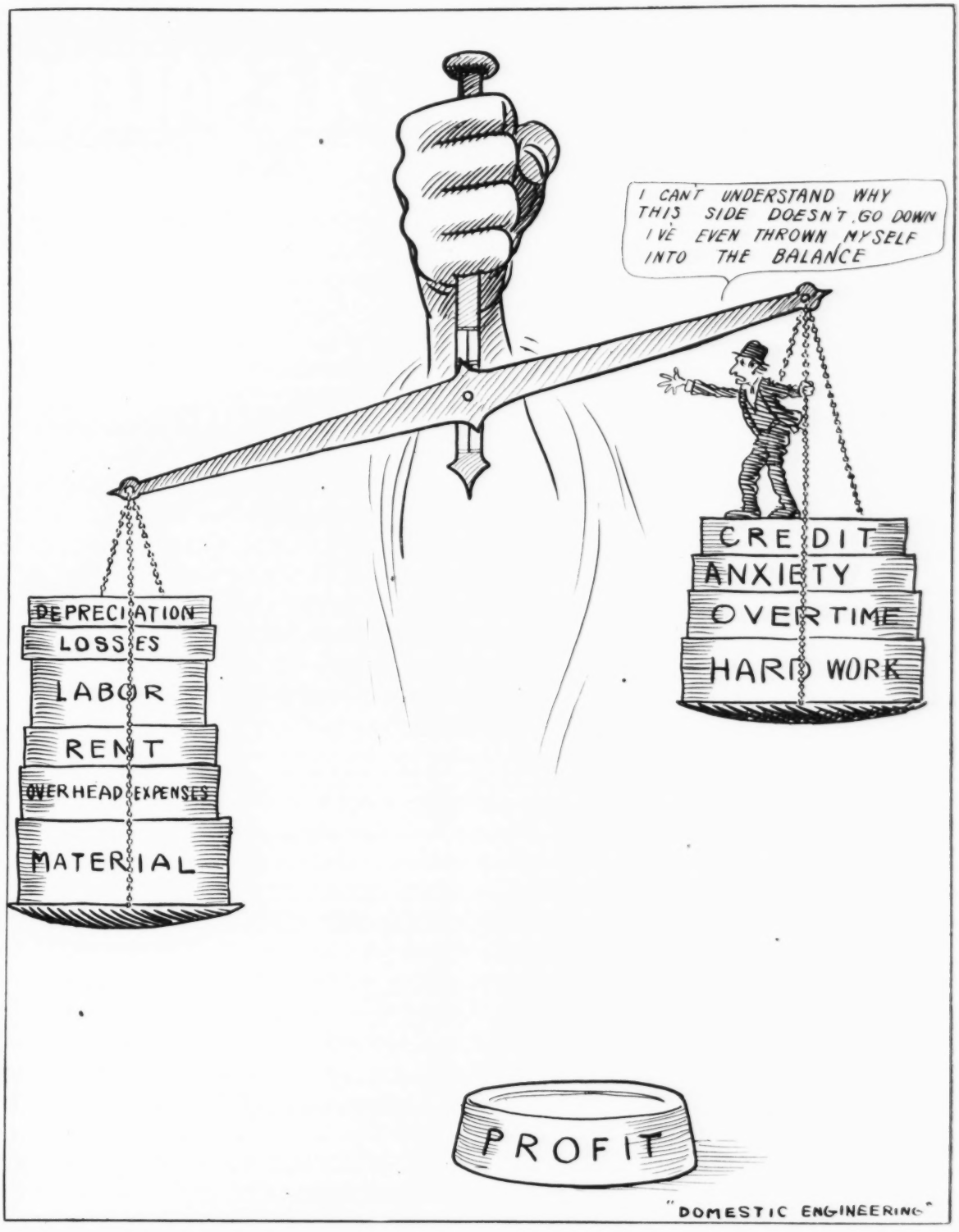
M. A. W.

THE MARKING OF A RIGHT AND LEFT "ELL."

Editor "Domestic Engineering":—Is there any manner in which an ell that has a right thread at one side and a left thread at the other is marked differently from the ordinary ell? Helper.

You will find that if you examine the right and left ell it has some projections on the left hand end that look very much like ribs. Sometimes, however, the letter "L" is simply marked on the fitting.

"Domestic Engineering" Cartoon on "The Dangers of Under-Estimating—XXXIII.



Weighed in the Balances and Found Wanting.—He Forgot the Other Weight.

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

HAS OPENED BRANCH OFFICE IN NEW YORK CITY.

The Dayton Pump & Mfg. Co., Dayton, O., has opened a branch office at 105 West 40th St., New York City. The new office is in charge of Wm. V. Holley.

WILL MAKE WATER-CLOSET COMBINATIONS.

The Stewart Tank and Manufacturing Co., Cleveland, O., has been incorporated with an authorized capital of $25,000, to manufacture water-closets, tanks and other plumbing-fixtures. The incorporators are: Chas. A. Morris, Owen N. Wilcox, A. M. Goodwin, H. D. Murphy and R. L. Caldwell.

WILL ERECT THREE NEW KILNS.

The Wheeling Sanitary Manufacturing Co., Wheeling, W. Va., has let the contract for the erection of three additional kilns at its plant at Tiltonville, O., across the River from Pittsburgh. The company recently increased its capacity at the Wheeling plant, and is preparing to do a larger business than ever by increasing the kiln capacity of the Tiltonville works. The new kilns will nearly double the capacity at Tiltonville.

JOHN T. KNOTT HAS ORGANIZED NEW PLUMBERS' WOODWORK CONCERN.

John T. Knott, Fort Wayne, Ind., well-known to the plumbing supply trade throughout the country, has just completed the organization of a new company which will manufacture plumbers' woodwork. The new concern will be known as the Knott Mfg. Co., and it will establish a well-equipped factory on Columbia and Barr streets, Fort Wayne, Ind., in a building formerly occupied by a wholesale company. The location secured affords good shipping facilities, having a siding on the Nickel Plate Railroad at the rear of the building. The installation of machinery was started this week and it is expected that the plant will be in operation inside of 30 days.

WISHES TO REPRESENT MANUFACTURERS OF PLUMBING GOODS.

The Bureau of Manufacturers at Washington is in receipt of a letter from a business man in Mexico who wants to represent American firms manufacturing bathtubs, lavatories, enameled iron goods, iron and steel drain-pipes, and other plumbing supplies. Information can be secured by firms interested by addressing File No. 6,377, Bureau of Manufacturers, Washington.

WELL-KNOWN WESTERN JOBBING BUSINESS CHANGES HANDS.

An old firm in the wholesale plumbing and heating trade in Lincoln, Neb., has changed hands by the sale of the capital stock and entire business of the long-established company of Cooper & Cole Bros. The new owners are J. Cass Cornell, president and treasurer; Chas. Cornell, vice-president; Lyman Searl, secretary; and W. H. Wigman, manager. For many years Cornell Bros. have been in the hardware and implement business at Ord, Neb. J. C. Cornell, a past president of the Nebraska Hardware Dealers' Association and at present one of the directors of that organization, is very widely known among the hardware men of the state as a first-class business man. W. H. Wigman, the new manager, has had many years of experience in the business just purchased, having been with the Crane Co., and also with the United States Supply Co., of Omaha, for 22 years, in fact he has been sales manager for the U. S. company for the last 10 years. Lyman Searl, the secretary of the new company, was with the Crane Co. for 20 years and held the position of assistant sales manager. Mr. Bennett was also with the Crane people for 10 years. These men, joining forces, bring to the business of Cooper & Cole Bros. long experience in that branch of the jobbing trade and wide acquaintance with the retail trade throughout this territory.

The old name of Cooper & Cole Bros., that has headed the business for many years, will be retained as will also the working force, no change being contemplated at the present time.

The new company has purchased the entire capital stock of the old business and the same will be immediately strengthened and broadened. They found a stock of $125,000 on the floors and in the warehouse and this will be at once increased to be ready for the newly developed business. Greater storage capacity will be provided and additional salesmen will be put on the road. City business will be given especial attention through a regularly installed city salesman. Cooper & Cole Bros. now have traveling salesmen covering Nebraska, Wyoming, western South Dakota, eastern Colorado and northern Kansas, and it is the intention of the company to extend this territory still further. The line of goods handled by this firm is comprised of high-class plumbing material, hot-water and steam-heating apparatus, iron pipes and fittings, engine-trimmings, windmills, pumps, valve-supplies, rubber hose, belting, packing, etc.

The new owners of Cooper & Cole Bros. are prepared, with the wide acquaintance in this territory that the old firm has established, and with their personal acquaintance, to build and extend their business into one of the foremost jobbing lines in the Missouri Valley.

THE NELSON CLEAN-OUT DRAIN.

Nat Nelson 1011 N. Fifth St., Kansas City, Kans., is sending out a neat little booklet, illustrating and describing the Nelson clean-out drain. It is so constructed as to avoid depressions in the floor of the cellar, preventing accumulations of water and dirt. The drain is extra heavy, having a 10-in. grate made in one piece with the exception of the lid. It is provided with a 2-in. plug having a standard thread, which affords convenient opportunity for the connection of a smoke testing machine. Mr. Nelson states that tests with the drain will save its cost in time on every job. The 2-in. plug is brass, and will not corrode and is accessible with any size wrench, from 24-in. down. Further particulars can be obtained upon application. When you write, mention "Domestic Engineering."

WESTERN TRADE LITERATURE.

M. L. Kline, 84 Front St., Portland, Ore., advises us that he is about to issue a new general catalog, showing his heating, plumbing and engineers' supplies. This has been compiled with a great deal of care, and practically all the principal lines illustrated and described are stocked and can be shipped with promptitude. The catalog is intended for distribution throughout the Pacific Northwest. Mr. Kline will be pleased to receive names of those interested who desire the catalog mailed to them upon its issuance, which will be in the course of two or three weeks. Mr. Kline has been connected 25 years with the

jobbing of plumbing, steam and engineers' supplies on the coast. He employs 30 people, including six traveling salesmen, covering the territory of Oregon, Washington and Idaho. They devote particular attention to specialties in plumbing and steam-heating lines. Those who desire to receive the catalog, kindly apply at once, mentioning "Domestic Engineering" as the source of their information.

THE WARREN WEBSTER & CO. CONVENTION.

During the week of March 6 to 11, 1911, Warren Webster & Co., of Camden, N. J., held a convention of the district managers and engineers, representatives from every state in the union participating. Headquarters were established at the Bellevue-Stratford Hotel, Philadelphia, and the convention started with a dinner given by the company on Monday, March 6th, to the assembled guests, covers being laid for 46.

A carefully prepared program was arranged for the business meetings, which were held in the Camden Y. M. C. A. building. The chief engineer of the company, Wm. G. Snow, acted as chairman of the convention and presided at the meetings, which were conducted strictly according to parliamentary practice. Although originally planned for two days, it was necessary to continue the meetings from Tuesday to Saturday, with morning, afternoon, and evening sessions. Papers were read by several district managers and by those in charge of the various departments of the business, followed by general discussions of each paper. A selected list of topical discussions was also prepared, covering in detail the wide range of the business, the principal purpose of the convention being thoroughly to post the assembled representatives in the developments in apparatus and established standards in methods, based upon the experiences and experiments of the company in all sections of the country, and to unify the conduct of the business throughout the United States.

The convention was highly successful, and a pleasing incident of the week was the presentation by the district managers of a magnificent silver loving-cup to Warren Webster, president and founder of the business.

The photograph taken at the opening dinner shows the assembled delegation, representing all sections of the United States and Canada.

The Warren Webster & Co. Convention, Held Recently at the Bellevue Stratford Hotel, Philadelphia.

A STUDY OF THE VENTILATION OF SLEEPING CARS.

"A Study of the Ventilation of Sleeping Cars," is the title of a pamphlet containing an excellent address by Thomas F. Crowder, M. D., presented at the thirty-eighth annual meeting of the American Public Health Association, Milwaukee, September, 1910. It records the results of many instructive experiments on car air-conditions, with special reference to carbon-dioxid quantities. The results of the experiments demonstrate the truth of the contention that the discomfort and evils of bad ventilation are due not to the carbon-dioxid action, but rather to heat and moisture-excesses. Copies of this valuable pamphlet can be obtained from the Department of Sanitation, The Pullman Co., Chicago, of which department Mr. Crowder is the superintendent.

WATER-CLOSET COMBINATIONS.

The Trenton Potteries Co., of Trenton, N. J., has issued "Some Important Facts Concerning Water-Closet Combinations." The title is interesting, and the appearance of the work itself is embellished by an artistic blue-panelled embossed cover. The object of the booklet is to familiarize architects, the plumbing trade and the consumer with desirable types of water-closets. Excellent presentation is given of syphonic action in water-closets, of three types, the illustrations showing the special constructive features of the syphon-jet closet and describing the efficiency of its action, resultant from such construction. Throughout the work special applications of the Trenton products are shown, one of the most interesting pages devoted to a consideration of the raised rear-vent water-closet. Every sanitarian interested in first-class closet construction can profitably spare time for a study of the Trenton types. The booklet can be obtained from the Trenton Potteries Co. upon request.

THE "FIRE KING" GAS-RANGE.

A. Weiskittel & Son Co., Baltimore, Md., are heralding to the world the merits of "Fire King" gas-ranges, in a very handsome catalog, printed in two colors. These gas-ranges have many new features, including an open-door lighter, spring catch-doors, special burners, and quick-acting ovens. The "Fire King" gas water-heaters are also interesting. These have double sheet-iron jackets and enameled or duplex water-coils. Many types of stoves, ovens and plates are shown, and the accessories at the end of the catalog should form good side-lines for all those in the heating business. Copy of the catalog can be obtained by application to A. Weiskittel & Son Co.

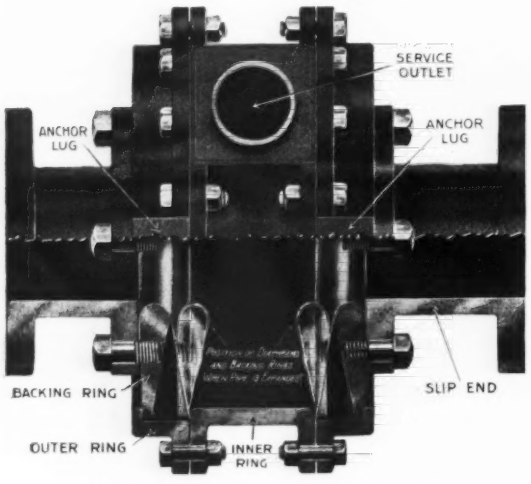
INTERESTING TO STEAM-FITTERS.

Cornell & Underhill, Spring and Greenwich Sts., New York City, have recently issued a neat little illustrated booklet descriptive of the merits of "Toledo" pipe-threading devices. One of the photographs shows a "Toledo No. 2" in operation, by the use of which one man installed a steam-separator without taking down his steam-line. "Toledo No. 2" is gaining new friends daily. The booklet tells how one boy can cut a 4-in. thread with it without difficulty. The "Toledo No. 4" is a geared adjustable threading device, weighing only 225 lb., and is shown in operation on a 10-in. pipe. A new "Toledo" tool is illustrated, known as the "Vosper" pipe-cutter, which cuts the pipe off instead of pressing it apart, as is done by the ordinary wheel-cutter. All practical steam-fitters will be interested in this booklet, a copy of which can be obtained upon application to Cornell & Underhill.

AN IMPROVED PACKINGLESS, DIAPHRAGM-EXPANSION JOINT.

The Central Station Steam Co., Detroit, Michigan, manufacturers of equipment and supplies for district-heating plants, has recently placed on the market a new and improved type of packingless, diaphragm-expansion joint. The accompanying interior view of a double joint shows the construction and method of operation.

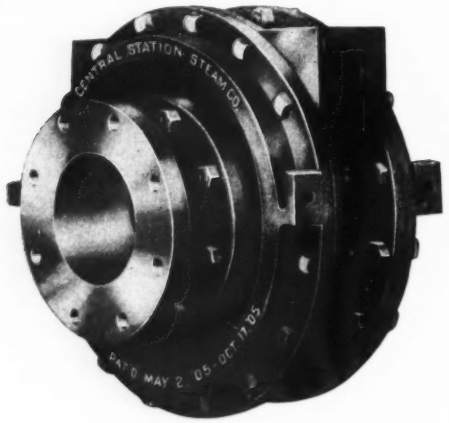
The double joint consists of two annular diaphragms of heavy cold-rolled and annealed copper, clamped at their



Interior View of Double Expansion-Joint.

outer edges between a cast iron "inner-ring" and two cast iron "outer-rings" and having their inner edges spun through and around the inner edges of the cast-iron "backing-rings." The copper is brought far enough up on the outside face of the backing-ring to permit of clamping it securely between the backing-ring and the "slip-end" which is a short flanged cast-iron nipple. The outer-ring, inside of which and concentric with which, the backing-ring is located, is recessed to a depth considerable in excess of the thickness of the backing-ring.

In operation, the joint is placed in the pipe-line with the

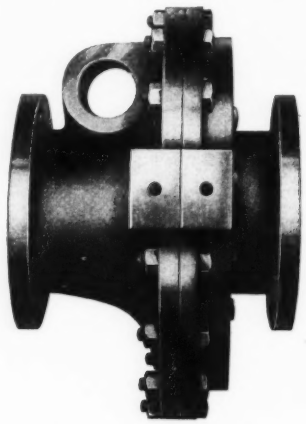


Double Expansion-Joint.

slip-ends and backing-rings drawn out to their farthest limit. The inner-ring and outer-rings are rigidly anchored, by cast-iron lugs, into the concrete or brick box built around the joint, and service-pipes to the buildings on each side of the street are connected to the service-outlets. As the pipe expands, the slip-ends and backing-rings move toward the middle of the joint and the copper diaphragm, which touches the backing-ring only at the inner edge when the pipe is contracted, is now drawn close over the backing-ring which reinforces it and carries the pressure of the steam.

Very few parts enter into the construction of this device, a double joint capable of taking up the expansion in 100 ft. of line, having only nine parts, exclusive of bolts and anchors. The diameter is also less than in any other make of diaphragm-joint, resulting in a saving in cost of the masonry work around the joint. The diaphragms are smooth, without corrugations to crystallize and break in service, and changes of position due to expansion bring no tensile strains on the copper. Moreover, the maximum bending of the copper at any point, due to change of position, cannot exceed 10 deg.

A large factor of safety has been provided in the length of traverse. The general practice is to provide for 7/8-in.



Single Expansion-Joint.

expansion in 50 ft. of line, but these joints are designed to permit of 1¼ in. in 50 ft.

The backing-ring, which forms the reinforcement for the copper diaphragm, is one solid heavy iron casting, presenting a smooth unbroken surface to the copper.

The single joint is similar in construction to the double joint except that it has but one diaphragm and is designed to take up the expansion in only 50 ft. of line.

GASKETS FOR PRACTICAL STEAM-FITTERS.

The selection of gaskets for a steam-plant demands careful consideration. An error in choice can be the source of costly disaster. There has been placed on the market a combination copper and asbestos gasket which is making great strides in popular favor. It is used to great extent in the construction of all first-class pipe-work. A good gasket is a garantee against any shutting-down of the plant caused by inferior packing used in flanges. The shutting-down of some plants, such as electric-lighting plants, postoffices,, hospitals and sanitariums, as well as manufacturing plants, is a very serious and costly matter. You can very readily see that the selection of the proper gasket is more to be considered than its cost, especially when you take into consideration the fact that it takes a plant of good size and equipment when the total amount of gaskets will cost $200 or more. The writer recollects in his pipe-fitting experience when he was under forfeiture of $400 for every hour over a certain time specified that the plant was not in running shape. The general cost of the best gaskets made nowadays is a very small matter for consideration alongside of the importance of their reliability, durability and endurance in guarding against unexpected shutting-down of plants. Very few engineers realize the total expenses involved when cutting out a boiler from the battery for cleaning it out, regenerating steam from cold water and cutting back into the battery. An immense amount of heat is wasted and regenerated in doing this, also a great deal of labor is expended in some plants, hard and difficult labor, too, in shutting off valves, rechanging valves, etc., where the boilers are especially large, as well as the pipe-work.

Should a gasket give way in a main line and you had to shut off large valves, bank your fires, pump cold water into your boilers, shut down your engines, etc., $50 ex-

penses would be about the smallest item for stopping this leak, and the cost of the gasket itself would not be over $5. In some plants the manipulation of valves in starting up and closing down plants is a tremendously hard job and also very dangerous in many cases. In most cases the danger is caused by the lack of by-pass being up in valves or by the mains being without the proper bleeding and drainage. It often requres two men with the use of monkey-wrench on wheel of valves to operate or close them, and as the valves are generally in a good hot place, two men operating three or four of these valves are pretty near dead to the world for the rest of the day.

To overcome this hard work in operating valves, shredded babbitt-metal packing should be used in the stuffing-boxes, after which it will be found that one man can operate any size valve by hand easily, without the use of tools, providing by-pass is used to balance the pressure on each side of valve.

In the gaskets manufactured by the Cincinnati Gasket and Packing Co., 1538 Plum Street, Cincinnati, O., in which copper and asbestos are combined, special attention has been given to one feature not generally taken into consideration. This point is "Vibration." This question of vibration is one of the most troublesome ones that the engineer has to contend with in his piping-systems. Many gaskets furnished to engineers fail, owing to the vibration in pipe-lines.

Engineers should educate themselves as to the cause and effect and proper usage of goods. As an illustration, many gasket companies will send samples of packing upon request regardless of whether they are to be used for a high or low-speed engine, whether the engine is one year or 100 years old, whether it is in good, bad, medium or rotten condition, whether the engineer is a good practical mechanic or not able to take care of packing. All these items are ignored.

It will readily be seen that it takes different articles for different conditions and effects and that there is no cure-all article that can be used in any plant, but conditions must be specialized. Some plants have bad engines, others have bad boilers, some, bad piping-systems; others, injurious waters for generating steam. Again, there are piping-systems subject to great variations of temperature in winter or summer in their engine or boiler rooms, and quite a list of other items of special peculiarities.

It would be advisable for all manufacturing firms to save themselves a great deal of trouble and expense in their steam-plant equipment by consulting with a gasket and packing company in the same manner that they would go to a first-class surgeon for general advice on their constitution. After applying to such a surgeon, there would be some room for the subject of garanteeing appliances. Until such interview would take place, each would be in ignorance of the conditions of the other and there would be no reliable results.

Wm. Schultheis, vice-president of the Cincinnati Gasket & Packing Co., Cincinnati, represents the second generation of pipe-fitters in this city and has had years of practical experience in the pipe-fitting line. Mr. Schultheis will be glad to consult with steam-fitters desirous of securing gaskets absolutely suited to the conditions of their jobs. Literature illustrating and describing the company's "Trinity" and "Triple" combination gaskets will be furnished upon request.

CALLS THEM THE MOST SATISFACTORY FIXTURES.

Thos. Kelly & Bros., Chicago, Ill., have received a most satisfactory tribute to the excellence of their products from O. M. Neilsen, chief engineer of St. Charles Hotel, New Orleans, La. Mr. Neilsen says in part:

"The closets, with accessible valve, installed by John S. Keily, plumber, some two years ago for rough usage in the helps' department of this hotel, are the most satisfactory fixtures in our building. We have tested many so-called best closets and found them nothing better than a nuisance, as they require continual care and repairs.

"In the above time we have never had a tool or a moment's time spent on your closets for repairs, also they show a saving of 75 per cent in water-bills. Having had experience with valves in Europe and America, I most cheerfully recommend your closets as perfection, mechanically."

The closets referred to are in use 24 hours per day. The Kellys state that many of their valves are in present use, having been installed from 10 to 15 years without repair.

TWO POPULAR PLUMBING SUPPLY SALESMEN.

The accompanying reproduction of a photograph taken last week in Philadelphia, Pa., shows a good likeness of two popular plumbing-supply salesmen, namely J. F. Gibson, of the Cooper Sanitary Mfg. Co. of Philadelphia, and E. DeForest Winslow, of the Judd-Winslow Co., Muskegon, Mich.

J. F. Gibson and E. DeForest Winslow.

PERSONAL MENTION.

John F. Hale, vice-president of the Consolidated Engineering Co., Chicago, has resigned and accepted a position with Warren Webster & Co., Camden, N. J., with whom he was formerly connected for a period of eight years.

Edw. B. Gordon, jr., for some years head of the engineering department of the Consolidated Engineering Co., Chicago, has been promoted to the position left vacant by John F. Hale's resignation.

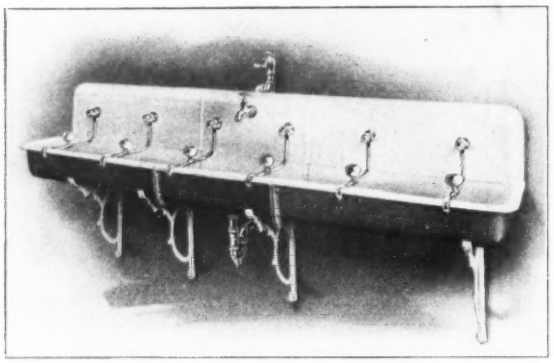
Joseph A. Weldon, the well-known master plumber, of Pittsburgh, Pa., has been spending a brief season in the South, some time of which was in the vicinity of New Orleans.

IT IS NOW THE JUDD-WINSLOW CO.

Just as we go to press, we are in receipt of an announcement stating that the Judd-Winslow Co. has succeeded to the business of the E. C. B. Judd, Inc., Muskegon, Mich., manufacturers exclusively of closet-seats of the Keystone brand. E. DeForest Winslow, who for a number of years has been closely identified with the plumbing and heating trade as a member of the staff of "Domestic Engineering", and for the last year associated with the Judd concern, is now a partner in the business and will handle the sales manager's end, calling on the jobbers throughout the country. With its new factory, built last year, the company has excellent facilities for manufacturing water-closet seats, and by specializing exclusively in this line it is in good condition to supply the various demands.

THE CHI-FAU-CO. DRINKING FOUNTAIN.

Every day sees an increase in the movement for the suppression of the death-dealing drinking-cup. Countless examples have been submitted of infection by this loathsome cup, and the legislatures of many states have recognized and furthered the efforts for its suppression. In its place manufacturers have put upon the market different types of drinking-fountains which eliminate all danger of contagion. We illustrate a sanitary battery recently installed by the Chi-Fau-Co., 313 S. Clinton St., Chicago, which will commend itself immediately to the reader. The fountain device is known by the trade name of the Chi-Fau-Co. The photo-



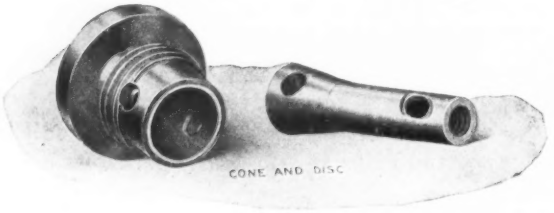
The Chi-Fau-Co. Drinking Fountains.

graph shows its installation on the standard roll-rim enameled iron sink in a Chicago school. This drinking fountain garantees the minimum use of water. It is made with either vitreous china or German silver cup. It is without sharp points or edges, so that no injury can be sustained by the children in its use.

The flow of water can be regulated to any desired stream under any water pressure by means of a needle-point valve arranged within the body of the cock. It is out of reach of curious fingers, but easily accessible to the operator. An additional point of merit is that the mischievous boys cannot squirt these fountains by pressing their fingers over the jet. These fountains are light but strong, and being highly polished and heavily plated, have a neat and very attractive appearance. Further details concerning their construction can be obtained from the Chi-Fau-Co.

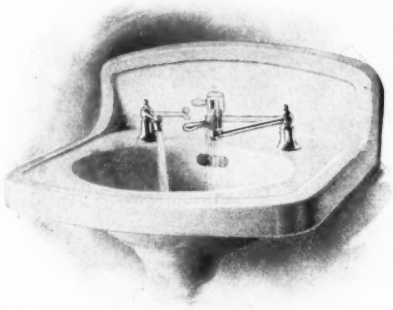
THE WRIGHT BUBBLING DRINKING FOUNTAIN.

The Wright drinking-fountains, shown in the accompanying illustrations, derive their name from the fact that their main feature is the Wright patent valve. These fountains have standard connections for attachment to lavatories, walls or sinks. For lavatories they have a lifting spout, that when not in use stands perpendicular



The Wright Patent Valve.

and pulls down over bowl for drinking purposes, or a swinging spout, operating horizontally like our faucets, the movement over and out of basin radius opening and closing the valve. For wall or sink use they have standard ½-in. and ¾-in. pipe connections and can be attached so that spout will operate either perpendicularly or horizontally. The standard length of spouts is 6 in., but they can be furnished in longer lengths where it is necessary to bring the cup close to outer edge of bowl to make it accessible to small children. The handles on cups are of white porcelain, strong and firmly attached to withstand hard usage. The cups have white porcelain mouthpieces that are constantly washed by flow of water when fountain is in operation. It being necessary to move spout to a definite position to get the fountain to work, makes it impracticable to get the lips on mouthpieces before water commences to flow and insures mouthpieces always being washed off before drink is taken. Inserted in cups below mouthpieces are several pieces of fine wire gauze to check flow of water. Besides breaking the flow of water, this gauze also acts as a strainer and, as mouthpieces unscrew, can be easily removed for cleaning or renewal.



The Wright Drinking Fountain.

Cups are made to furnish a bubble of a size to compel drinking from the bubble itself and preventing any contact between the face and fixture.

The fountains are said to be ideal for all conditions, public or private, where a "bubbler" is wanted that is sanitary, ornamental in appearance, strong and durable in construction, easy of operation and accessible for children and adults alike. Full particulars about these fountains can be obtained from the manufacturers, the Wright Cpecialty Co., Youngwood, Pa., or from Trick Bros., manufacturers' agents, 640 Wabash Bldg., Pittsburgh, Pa. Kindly mention "Domestic Engineering" when writing.

THE ILLINOIS CHAPTER'S APRIL MEETING.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers will hold its regular monthly meeting on Monday evening, April 10, 1911, in Vogelsang's Banquet Hall, 178 Madison St., Chicago. The special feature of the evening will be an illustrated lecture by E. F. Capron on his recent Southern trip. His pictures and comments on the Panama Canal will no doubt prove of great interest to those who are fortunate enough to be able to attend the lecture.

ANNUAL MEETING OF EASTERN TRADE GOLF ASSOCIATION.

The Eastern Trade Golf Association will hold its annual meeting at 12 o'clock, noon, Wednesday, April 12, 1911, in the Gothic room of Murray's restaurant, 228 West 28th St., New York City. The annual reports of the officers will be presented, and these will be followed by the annual election. It is expected that arrangements will be made at this meeting for the fourth spring tournament of the association. The officers of the association are: President, C. N. Brizse; vice-president, W. G. Le Compte; captain, J. Barton Garfield; secretary-treasurer, A. S. Armagnac, 1123 Broadway, New York City.

He Knew What He Wanted.

A young Baltimore man, says the American of that city, has a habit of correcting carelessness in speech that comes to his notice. The other day he walked into a shop and asked for a comb. "Do you want a narrow man's comb?" asked the clerk. "No," said the customer, gravely, "I want a comb for a stout man with rubber teeth."

THE METAL MARKET

PIG-IRON MARKET QUIET.

Few sales have been made during the week, outside a restricted territory in the vicinity of New York. This includes some small contracts to machine-tool builders in New England and some jobbing foundries in New Jersey. The American Locomotive Co. likewise has an inquiry in the market for a fair tonnage of foundry iron. Prices in the main are unchanged, although some Buffalo furnaces have shaded their quotations slightly. This does not amount to more than 25 cents per ton. Quotations are as follows:

No. 2 Southern foundry, Brimingham	$11.00 to $11.50
No. 1 Northern foundry, New York	15.75 to 16.00
No. 2X Northern foundry, New York	15.50 to 15.75
No. 2 plain, Northern foundry, New York	15.25 to 15.50
No. 2 Northern foundry, Chicago	15.50 to 16.00

OLD IRON.

The market in old iron is dull and prices hold steady. A slight improvement is noticeable in some quarters in foundry stock. Prices in New York and vicinity are as follows:

No. 1 yard wrought, long	$12.50 to $13.00
No. 1 yard wrought, short	11.50 to 12.00
Heavy-melting steel scrap	11.00 to 11.50
Machinery cast	12.00 to 12.50
Wrought pipes and tubes	11.00 to 11.50
Malleable castings	11.00 to 11.50
Wrought turnings	7.00 to 7.50
Cast borings	6.50 to 7.00
Stove plate	9.00 to 9.50
Light iron	5.00 to 5.50

PIG-TIN ON A MORE SATISFACTORY BASIS.

For the first time in several months it is possible to buy pig-tin in New York at about import cost. This was made possible by the arrival of the Minneapolis, which brought 715 tons. The deliveries of tin during March were record breaking and there were available for delivery during the month nearly 7,000 tons. Buyers are entering the market more freely even at advancing quotations because of the absence of any premium. Sales were made during the week at 40 to 41.25 cents, closing at the latter figure.

LEAD.

The buying of lead has been much better. The outside sellers, who on account of their lower quotations have been taking all the business, advanced their quotation to 4.45 cents and even at this figure have booked numerous orders. The leading interest continues to quote 4.50 cents for shipment lead in New York.

SPELTER.

The spelter market is dull; while some sellers are demanding 5.65 cents New York, others continue to quote 5.60 cents. In St. Louis quotations are unchanged at 5.45 cents.

A BETTER FEELING IN THE COPPER TRADE.

Although quotations are still at a low figure, the copper trade is in one of its cheerful moods, or perhaps, less pessimistic moods. The reason for that is consumption is more nearly equal to production. The mine owners can operate at full capacity and secure the maximum benefit from such operations. Then, too, operating costs have been reduced. The miners, knowing the unsatisfactory state of the market, are doing better work and copper is being produced cheaper at an average than for any time in the last decade. There has been a great deal of quiet buying of wire, and it is evident that a good deal of wire will be used this year. A large part of this is wire for trolley roads and the telephone companies continue to buy freely. Prices are without change at 12.50 cents for Lake and 12.25 cents for electrolytic.

GOVERNMENT CONTRACTS TO BE AWARDED.

Supervising Architect James Knox Taylor, Treasury Department, Washington, D. C., will receive sealed proposals as follows:

Until 3 p. m., April 17, 1911, for the construction, complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, of the U. S. postoffice at Ames, Ia.

Until 3 p. m., April 20, 1911, for the construction, complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, of the U. S. postoffice at La Grange, Ga.

Until 3 p. m., April 21, 1911, for the construction, complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, of the U. S. postoffice at McKinney, Tex.

Until 3 p. m., April 24, 1911, for the construction, complete, including plumbing, gas-piping, heating apparatus, electric conduits and wiring, of the U. S. postoffice at Braddock, Pa.

All proposals should be in accordance with drawings and specifications, copies of which may be obtained from the custodians of the above sites or from the office of the Supervising Architect at Washington, D. C.

THE AKRON BUILDING CODE.

The new building code of the city of Akron, O., was issued on February 1, 1911. It covers 73 pages, containing 450 sections, is most comprehensive in its treatment, and is well-indexed. W. S. Voris, a prominent member of the American Society of Plumbing Inspectors and Sanitary Engineers, is the chief sanitary inspector of Akron. Other cities contemplating the preparation of similar codes will doubtless be able to procure a copy of the Akron code for guidance and comparison.

NEW PUBLIC-COMFORT STATIONS.

Youngstown, O.—This city will build a public-comfort station in the South Side Park. The building will be 15x20 ft. and built of tile and cement.

Akron, O.—This city is to have a public-comfort station at the corner of Main and Market streets, costing about $7,000. The building is to be white and of artistic construction, about 46x18 ft., with rooms for men and women and attendants. Hot and cold water for the nine washstands will be one of the features.

Elm Grove, W. Va.—Kimmins & Eckard, a well known plumbing firm, will make extensive improvements to their business property. The show-room and work-shops are to be increased, and new lines will likely be added after the changes have been completed.

Mansfield, O.—The Burt Sisters (address in care of Rudolph Hartman, 166 West Third St.) are taking bids for work on their new four-story $10,000 hotel building.

NEW ENGLAND NEWS.

Holyoke, Mass.—State President John F. Cabeen, of Salem; State Secretary John P. Drury, of Boston; J. W. Kenneally, of Springfield, and Andrew F. Curtin, of Medford, members of the state executive committee, were guests at a meeting of the Holyoke Master Plumbers' Association on Thursday evening, March 30th. All of the guests made short addresses and a social time was enjoyed.

Forestville, Conn.—C. W. Danforth and C. J. Foster have formed a partnership to conduct a plumbing business under the firm name of Foster & Danforth.

Darien, Conn.—Hoyt & Jessup, plumbers, have leased quarters in the new Lanz block.

Belfast, Me.—A. B. Wylie, who has for several years been employed by C. L. Wright, plumber, has gone into business on his own responsibility and will have his headquarters on Church street.

Torrington, Conn.—The Walker & Prudhon Co. has the contract for the plumbing of Michael Ruvallo's house on South Main street.

Dalton, Mass.—Among the improvements to be made by the school board during the coming summer season will be the installing of new heating plants in the Craneville and Center school buildings.

South Portland, Me.—The place of business of the South Portland Heating Co., located in a building owned by the Portland Wharf & Land Co., was destroyed by fire a few days ago. The fire is supposed to have started from an overheated stove in a tenement above the store.

Southboro, Mass.—Carl Stevens and Eugene Closson, of Marlboro, have opened a plumbing shop here.

Brockton, Mass.—A spark from a nearby chimney dropped through the skylight into the storeroom of Baker Bros.' plumbing establishment on Joslyn court a few days ago and started a lively blaze. The damage was not heavy.

Malden, Mass.—A. A. West has opened a branch plumbing establishment in Faulkner square. His main store in on Pleasant street in the Malden center district.

Melrose, Mass.—David Craig, former national president of the master plumbers' association and one of the leading members of the profession, has sold his home on Crescent avenue in this city and removed to Peabody. He has been a resident of Melrose for many years and is well known here.

Wareham, Mass.—A. Hunter & Co. have opened a plumbing establishment in the Hammond building on Main street and are exhibiting an up-to-date line of plumbing fixtures.

Stratford, Conn.—The board of education of Shelton has signed a contract with the Stone-Underhill Co., of Boston, for installing a heating and ventilating system in the new eight-room school building which is soon to be erected by that town. There will be four furnaces and a steam boiler.

Haverhill, Mass.—The strike of the carpenters, plumbers, steam and gas-fitters declared on May 1, 1909, two years ago, is still in progress, officially. Journeymen of all the craft have, however, found places and there is little likelihood of the strike being officially called off this year.

Plymouth, Mass.—Harry C. Benson, of this town, has gone into the plumbing business in Kingston.

Holyoke, Mass.—The board of trade is making efforts to have the plant for the manufacture of the Beauvais Instantaneous Hot-Water Heater, invented by a Holyoke man, located in this city.

South Framingham, Mass.—The chimney in connection with the new plant of the Gurney Heater Co., which is in course of construction here, will be one of the highest in this part of the state. The chimney will be over 100 feet tall.

Chelsea, Mass.—In the hope of attracting more business to the city, the board of control has given the Magee Heater Co. permission to build a line of railroad tracks through certain streets in the city, connecting the plant with the Boston & Albany Railroad.

NEWS FROM PITTSBURGH AND VICINITY.

Pittsburgh, Pa.—Judging from information that has been advanced in contracting circles during the last week, plumbers will be asked to submit bids for work in 50 or more new high-class homes, which are to be built this season by John F. Sweeney, who has built and sold over 500 homes in Pittsburgh during the last few years. Of this improvement, 15 or more of the houses will cost from $5,000 to $12,000 each.

Girard, O.—The Penn Mercantile Co. is erecting a $20,000 store, and the plumbing has been awarded to the Scholl Plumbing Co., of Youngstown, O.

Brushton, Pa.—Several good contracts have just been awarded the S. M. Dick Plumbing & Heating Co. Among these are the plumbing and steam heating in the new apartment building being erected by D. H. Curll, and the plumbing and heating in the new costly residence of William Murphy.

Columbus, O.—Contractors have been advised that the contract for the heating and ventilating in the new 10-story Hartman building has been awarded the William H. Conklin Co., of this city.

Lebanon, Pa.—A charter has just been granted the plumbing firm of Paul H. Light & Co. The capital stock is placed at $5,000.

MICHIGAN MASTER PLUMBERS' 19th ANNUAL CONVENTION.

Special Telegram.

The 19th annual convention of the Michigan Association of Master Plumbers was held at Muskegon, Mich., on Wednesday and Thursday, April 5th and 6th, with headquarters at the Occidental Hotel. The convention was well-attended and most successful in every respect. President W. J. Dowsett, of Jackson, presided and after having opened the convention he appointed E. W. Krueger and Thomas McFadden, both of Muskegon, as sergeants-at-arms. The following committees were then selected:

Auditing Committee: Geo. A. Van Landegend, Holland, L. A. Nowlin, Jackson; A. F. Hunter, Muskegon.

Press Committee: G. A. Richards, Grand Rapids; C. P. Tietze, Detroit.

Credential Committee: Wm. Hughes, Detroit; L. J. Holser, Pontiac.

Resolution Committee: L. J. Butler, Grand Rapids; H. J. Young, Kalamazoo; Frank Algoe, Flint.

Legislative Committee: T. J. Shields, Lansing; W. T. McGurrin, Grand Rapids; Otto A. Wurm, Detroit.

Mayor H. A. Rietdyk of Muskegon delivered a cordial address of welcome which received a suitable reply. The officers thereafter read their annual reports. S. H. Morgan, Detroit, delivered a stirring blackboard talk on "Costs and Estimates." L. J. Butler, Grand Rapids, delighted his hearers with his essay on "A Few Essentials to Success in the Plumbing Business."

Resolutions regretting the demise of the late Robert Sproul, of Grand Rapids, for many years an active association member, were then passed.

The election of officers for the ensuing year resulted as follows: President, T. J. Shields, Lansing; vice-president, G. McCullom, Muskegon; secretary-treasurer, Wm. A. Decker, Grand Rapids; national convention state-delegate, S. H. Morgan, Detroit; alternate national delegate, C. P. Tietze, Detroit. The executive committee will be composed of the officers and W. J. Dowsett, of Jackson, and H. J. Young, of Kalamazoo.

Kalamazoo was selected as the meeting-place for the next convention.

The Muskegon local association tendered the visiting delegates a fine banquet at the Occidental Hotel.

NEW YORK STATE NEWS.

In a decision handed down by the Court of Appeals, March 24th, the workmen's compulsory compensation act passed last year upon the recommendation of the Wainwright employers' liability commission, was declared to be unconstitutional. The decision was made in the case of Earl Ives, a switchman, who brought suit against the South Buffalo Crosstown Railway Co.

The main feature of the act of last year was that it required employers of labor in certain occupations, including contracting, to compensate their employees engaged in manual labor for any injury occuring during the course of the work, whether caused through the carelessness of the workman, or through no fault nor negligence of the employer.

Under the former statute the employer of labor was only responsible for accidents or injuries to employees which might be proven due to some fault or negligence on his part, and then only when it was shown that the workman was free from fault or negligence in contributing to the accident.

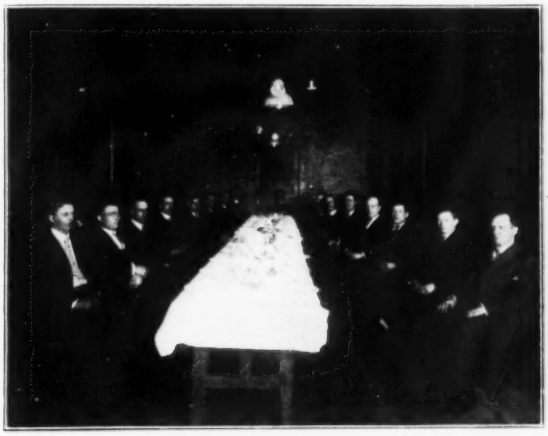
The court concedes the right of the legislature to repeal the old law which has been the settled policy of the state and the country, and the classification of certain trades as dangerous occupations is not criticised, but holds that to make the employer liable for an accident not due to his fault would be to deprive the employer of his property without due process of law, in violation of the federal and state constitutions.

The court concludes that the statute is void in so far as it imposes upon the employer a liability when he has violated no statute, has broken no contract and has been guilty of no wrong.

Columbus, O.—Bids for the heating and ventilating in the school to be constructed at Reeseville, O., by the local board of education were opened recently as follows: J. A. North, $1,535; Huffman, Conklin Co., Columbus, $2,666; Fitpatrich & Hoephner, Columbus, $1,998; Roy Brown, $1,997; Bryce's Heating and Ventilating Co., $2,233.

WATERLOO JOURNEYMAN PLUMBERS' ANNUAL BANQUET.

The local union of the journeyman plumbers of Waterloo, Ia., held a banquet at the Eagles' Hall, Waterloo, on Thursday, March 9th. There were about twenty members of the local at the table, and they had a most enjoyable time. The photograph of the assembly which



Journeyman Plumbers of Waterloo, Ia., at Their Annual Banquet.

we present to our readers was evidently taken before the banquet, on the principle of "business before pleasure," otherwise the table would not be so loaded with good things, neither would the members of the association look so eager to "get through with it," for Waterloo plumbers, we can say from experience, do not assume such expressions when off duty—if they ever wear them when on the job.

Springtime is Housecleaning Time

The "Old Dutch Cleanser" woman when she "chases dirt," arms herself with a stick.

The up-to-date housewife equips herself with a

CAPITOL RADIATOR BRUSH

The CAPITOL RADIATOR BRUSH reaches every nook and corner, behind or under the Radiator or between the sections. It can be used, too, for cleaning between the spindles of a staircase, or under bookcases, or other heavy pieces of furniture, which are inaccessible to the broom or dust-rag.

The CAPITAL RADIATOR BRUSH is strongly put together, is convenient to handle, and the neatest thing of its kind.

LAY IN A SMALL STOCK AT ONCE AND RETAIL THEM AT A PROFIT

Write Us To-day—Housecleaning Time is Almost Here

UNITED STATES RADIATOR CORPORATION

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PACIFIC COAST LETTER

Plumbers throughout California were much disappointed this week to learn that Governor Johnson had decided to veto the bill for a state plumbing law which had passed both houses of the legislature and which had been sent to him to be signed. To the delegation of master plumbers who called upon him in the interests of the bill, the governor stated that while he saw many excellent features in it he did not want to take the responsibility of adding to the list of commissions. He did not state that he would veto it but gave his hearers that impression and has since taken this action.

Power companies that have in the past been allowed to lay pipes in the streets of California cities for the transmission of steam for heating purposes without the formality of securing a franchise are commencing to realize that this state of affairs will probably not continue for long and are actively engaged in many quarters in rushing work on distributing systems in order to have them in place before restrictions are placed on their operations. A law has been passed by the state legislature giving to municipalities the power to grant franchises for this class of work and also to make it obligatory for a company in this business to make connections for property owners upon demand if their pipes are laid within 100 feet of the building where heat service is desired. In San Francisco there is great activity in this line and many of the small heating plants in the downtown section will be abandoned. The San Francisco Gas & Electric Co. is preparing to enter this field on a large scale and the laying of mains will be commenced at an early date. Other concerns are now operating central heating plants and are securing all the business that can be handled.

San Francisco.—The success that has been met with by several concerns in the central heating business has induced the San Francisco Gas & Electric Co. to enter this field and plans are now being made for the installation of a distributing system that will cost several hundred thousand dollars and which will cover the down-town district.

San Francisco.—Henry Ernest & Sons have secured the contract for the installation of a plumbing system in a class C building being erected on Stockton street just off Pacific, the contract being valued at $1,000.

San Francisco.—Changes have been made in the building plan of parts of the hospital group and bids are now being invited for the installation of additional heating and plumbing apparatus.

San Francisco.—Plumbers operating in the Mission district have been greatly annoyed of late by wholesale depredations of thieves who have entered partly completed buildings and made away with much valuable lead pipe. Several arrests have been made and it is now believed that there will be but little trouble of this character.

San Francisco.—Building permits during February were $1,760,430, a very satisfactory figure considering the shortness of the month and adverse weather conditions. It is anticipated that the spring season will be a very active one.

San Francisco, Cal.—Frank J. Klimm has been awarded the contract for installing the plumbing system in the structure being erected by Theodore Beilenberg at California street and Seventh avenue, the consideration to be $1,975.

San Francisco, Cal.—W. S. Snook & Son have been awarded the contract for the plumbing work to be done in the building being erected by Hyman Bros. on Kearny street, near California. The contract is valued at $3,686.

Vallejo, Cal.—The plumbing of the new Vallejo high school building is to be done by H. E. Wilder of that place for $4,685. The heating and ventilating work will be done by Chas. E. Thomas & Son of San Francisco, whose bid of $5,350 was accepted. Work on this structure is to be commenced at once.

Los Angeles, Cal.—The National Lumber Co. has just erected a large salt water tank at its yards and has this connected with a system of sprinkling pipes for fire protection.

Oakdale, Cal.—A new plumbing shop has been started by William Hoffman, who has had experience in this line in Germany.

Brawley, Cal.—The Brawley Plumbing & Sheet Metal Works, recently filed articles of incorporation with a capital stock of $10,000. A new building is to be erected to accommodate the business of this concern, and it is planned to carry a stock of supplies as well as to engage in the contracting business. C. C. and C. B. McCullough are the leading owners in the business.

Santa Rosa, Cal.—Stewart & McDougall, who have conducted a plumbing business for some time, have decided to dissolve partnership and the business will in the future be conducted by the latter.

Oakland, Cal.—Bids will shortly be invited for the plumbing work in the new City Hall and in the new Capewell building, both of these being important pieces of work.

Los Angeles, Cal.—Contracts will be awarded shortly for the plumbing, heating and ventilating work in the detention home near the County Hospital.

Albany, Ore.—C. E. Metzgus & Son have failed in business and have filed a voluntary petition is bankruptcy.

Roseburg, Ore.—B. A. Mahan, a prominent plumber, is dead.

Tacoma, Wash.—The Appling-Griggs Co. has been incorporated. This firm is engaged in the plumbing business.

Brawley, Cal.—Plans are being made for the erection of a septic tank. For the present sewage will be run into New River, but it is realized that a tank will also be necessary at an early date.

Woodland, Cal.—H. Kuhn, Jr., has formed a partnership with F. Weider for the purpose of engaging in the plumbing business.

Petaluma, Cal.—The announcement has been made that the Schluckehier Hardware Co. has gone out of the plumbing business but will continue to carry a line of plumbing supplies.

Los Angeles.—The Machinery & Electrical Co. has been awarded the contract for the installation of a heating and ventilating system in the Pilgrim Congregational Church building being erected at Pomona, Cal., the cost to be $2,497.

San Diego.—A heating-plant to cost in the neighborhood of $13,000 is to be installed in the state normal school building.

Sacramento.—The hearing of the case against master plumbers is now in progress.

RECENT INCORPORATIONS.

Cleveland, O.—The Koblitz Plumbing & Heating Co., with a capital stock of $25,000, to do plumbing. The incorporators are: O. E. Koblitz, D. N. Tilden, N. J. Young, M. Ferrell and Elmer G. Derr.

Brooklyn, N. Y.—The Deasy Mfg. Co., capital $10,000, to manufacture plumbing and steam-heating specialties, has been incorporated by Henry Albrecht, D. L. Donovan and Geo. Koons.

Evansville, Ind.—Evansville Plumbing Co., capital $10,000; plumbing contractors; directors, Emil Hartig, Anna Hartig and C. F. Werner.

Chicago, Ill.—International Automatic Valve & Supply Co., with a capital of $25,000, has been incorporated by John W. Creekmur, Walt A. Hansen and G. L. Schein, for manufacturing.

Salina, Kans.—The McConnell Plumbing Co. has been incorporated with a capital stock of $10,000.

Jersey City, N. J.—The Fergus T. Kelaher Co., 755 Montgomery St., has been incorporated by F. T. Kelaher, C. A. Kelaher and T. E. Lee, with a capital stock of $20,000, to take over the Fergus T. Kelaher's plumbing business.

Birmingham, Ala.—The Selman Plumbing & Heating Co., capitalized at $15,000, has been incorporated by J. A. Selman, Wm. C. Lebo, Frank H. Potter and F. B. Carpenter. The new firm will do general contracting and deal in heating, plumbing and electric specialties.

Cleveland, O.—The Norton Bros. Co. has been incorporated with an authorized capital of $2,000 to conduct a heating business. The incorporators are: J. C. Norton, I. J. Jones, J. J. Cummins, J. B. Cantillon, and M. P. Monney.